

## **Determinants and Competitiveness Outcomes of International Joint Ventures' Knowledge Acquisition: Facts from Algeria**

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### **ABSTRACT**

International joint ventures (IJVs) are seen as vital tools for gaining access to, learning from, and absorbing sophisticated economic businesses' embedded skills, technology and knowledge in order to gain a sustained competitive advantage and improved performance. The purpose of this article is to analyze transfer mechanisms (replication and adaptation) and formal governance mechanisms (contract and control) as predictors of IJV knowledge acquisition in Algeria's transition economic market, which would result in increased IJV competitiveness. With a sample of 122 oil and gas IJVs in Algeria and using PLS SEM 3.0 to analyze the data, the findings indicate that although transfer mechanisms facilitate IJV knowledge acquisition, formal governance procedures have no significant effect on IJV knowledge acquisition. Additionally, IJV's knowledge acquisition significantly enhances its competitiveness.

**Keywords:** knowledge acquisition, replication, adaptation, contract, control, competitiveness,

## INTRODUCTION

Large changes in the corporate environment, technological improvements, and increased market opportunities have made it essential that organizations work harder than their rivals to gain and maintain a long-term competitive advantage in the current climate. Due to the fact that their domain is still virgin and that they lack the resources and institutions necessary to develop themselves (Low & Robins, 2014), developing countries have begun to concentrate their efforts on strategies to attract foreign direct investment (FDI), which has emerged as one of the most dynamic components of international resource inflows to these countries (Low & Robins, 2014). In this vein, these governments have started to place increased emphasis on their foreign direct investment (FDI) policies, since FDI has been shown to be one of the most dynamic components of foreign resource inflows to all of these countries over the last decade (UNCTAD, 1999).

According to Javorcik and Kaminski (2008), developing-country governments are attempting to strengthen their FDI-based development plans by enacting a variety of beneficial policies targeted at persuading multinational corporations (MNCs) to invest. These favorable circumstances and surroundings are important not just to attract FDI, but also to capitalize on the potential advantages of foreign technology, talents, and other key externalities. When it comes to the formation of IJVs and strategic partnerships, there is a contrast between knowledge acquisition and knowledge accession (Grant & Baden-Fuller, 2004). IJVs help parent companies to achieve economies of scale, expand their market reach, manage risk and innovation, acquire new skills and technologies, and create new products or services faster and reliably than each business could accomplish alone (Jiang, Keller, Qiu, & Ridley, 2018).

As more than half of these IJVs fail (Bamford, Ernst, & Fubini, 2004), many of former studies conducted to examine IJVs' knowledge acquisition determinant factors i.g. absorptive capacity and social capital (e.g. Anh & Baughn, 2013; Anh et al., 2006; Dhanaraj, Lyles, Steensma, & Tihanyi, 2004; Lane, Salk, & Lyles, 2001; Lyles & Barden, 2000; Lyles & Salk, 1996; Steensma & Lyles, 2000; Thi Thuc Anh, 2017; Tsang, Nguyen, & Erramilli, 2004; Zhan, Chen, Erramilli, & Nguyen, 2009). Yet, a scores of studies examined dimensions of transfer mechanisms (Williams, 2007) and formal governance mechanisms (Liu, Li, Shi, & Liu, 2017b; Zhang & Zhou, 2013). Transfer mechanisms is defined as the method recipient firm engage in adapting and replicating knowledge from the donating company (foreign partners) (Mason & Leek, 2008). Formal governance designed to deal with transactional opportunism is essential to sustain ongoing exchanges. Formal governance eliminates private incentive seeking, enhances partnership confidence, and so fosters more commitment in inter-partner exchange by establishing mutually agreed-upon rules of behavior (Lee & Cavusgil, 2006).

In the knowledge-based approach, strategically oriented partnerships usually concentrate emphasis on IJVs as means via which enterprises receive organizational expertise inherent in their parent organizations (Knowledge-based business theory-KBV). As a result, competitiveness and performance grow (Grant, 1996; Grant & Baden-Fuller, 1995). Regardless, knowing how IJV knowledge acquisition affects IJV competitiveness is critical.

Aside from a few studies (Zhang & Zhou., 2009), little research has been done on how foreign partners' resources and experience affect IJVs' competitiveness.

The scientific contributions of this paper are classified into three areas. First, it contributes to the literature by responding to the call for a systematic overview of the underlying mechanisms and outcomes of knowledge transfer (Van Wijik et al., 2008) and enriching our understanding of the IJV learning process (Salk & Lyles, 2007), particularly the learning process in the post-knowledge transfer stage. Second, the study expands on previous critical literature reviews and conceptual research by conducting an empirical study on transfer mechanisms and formal governance mechanisms as potential determinants of IJV knowledge acquisition, as well as developing a more robust framework based on knowledge-based views and transaction cost economic theories (Battistella, De Toni, & Pillon, 2016; Meier, 2011; Williams, 2007). Third, our study responds to demands for a more diversified assessment of IJV competitiveness as a result of IJV knowledge transfer (Zhan et al., 2009) in order to enrich the literature on the repercussions of IJV knowledge acquisition.

The following structure of the paper demonstrating the literature review with clarifying the hypotheses and end by designing the conceptual framework. By doing so, this research aims to answer the following questions. Do transfer mechanisms and formal governance mechanisms have an effect on IJVs' knowledge acquisition from foreign partner? Does IJVs' knowledge acquisition effect on IJVs' competitiveness?

As a consequence, this study offers five hypotheses (H1 and H2) indicating a positive association between IJV knowledge acquisition and transfer mechanisms (replication and adaptation). In addition, (H3) and (H4) address the beneficial influence of formal governance structures (contract and control) on IJV knowledge acquisition, and (H5) defines the relationship between IJV knowledge acquisition and IJV competitiveness. This paper will be formatted as follows: The first section is an introduction, which also provides the study's structure, and is followed by a review of the literature and hypotheses. The methodology section describes the study's technique, which is based on a sample of 122 Algerian IJVs in the oil and gas industries. The next is analysis and results section, where the data has been run through smart PLS 3.0. The last two sections presented the discussion and conclusion as well as the limitations and directions for future research.

## **KNOWLEDGE ACQUISITION**

Nowadays, the importance of learning has been steadily rising for those who work in knowledge-intensive businesses. People are seen as a valuable resource because individuals are capable of creating, sharing, and using information, and because businesses may make effective use of knowledge via their workers' talents and competence. Additionally, an organization's competitive advantage may be maintained by effectively managing and exploiting critical resources such as personnel, money, machines, and material. Therefore, firms need new information (Bolisani and Bratianu, 2017); they may gain from integrating it with current company expertise (Cohen and Levinthal, 1990). This allows a business to develop faster and more efficiently than rivals via exploration and exploitation (Rosenkopf and Nerkar,

2001). Knowledge-based business theory (KBV theory) describes knowledge as a critical aspect in enhancing a firm's competitiveness and performance (Grant, 1996; Narteh, 2008; Nickerson & Zenger, 2004).

A distinction is made between tacit and explicit knowledge in terms of the nature of the information included within. Knowledge that is not verbalized, intuitive, or articulated is the most difficult to encode and transfer: "tacit information is knowledge that is not verbalized, intuitive, or articulated and that has a personal component that makes it difficult to codify and convey." (Polanyi, 1962). In the words of Battistella et al. (2016), this kind of knowledge is not stated and unspoken, and it has an intuitive and personal (individual) nature, making it difficult to describe and communicate. According to Nonaka and Takeuchi (1991), tacit knowledge resides in people, namely in their brains and faculties, and its transfer is based on the transmission and learning abilities of the persons who possess it. In contrast, explicit knowledge is information that can be expressed in a formal language and is easily transferred among individuals (Polanyi 1966). Thus, explicit knowledge is communicated in language, which, according to the author, makes it simpler for information to be transferred between individuals. Nonaka (1994) goes on to say that explicit knowledge is mostly comprised of information that has been recorded in papers or corporate information systems; for example, an explanation of the techniques and characteristics of a certain business process or product would be an example of explicit knowledge.

In general, knowledge acquisition is based on acquiring fundamental and vital information and technology that may improve the efficiency and effectiveness of an organization, among other things (Park, 2010). Knowledge acquisition, according to Appelbaum and Goransson (1997), is defined as "reported changes in insights, knowledge, and linkages between past and future activities, resulting in the advancement of organizational competence." Furthermore, knowledge acquisition refers to the process of acquiring all accessible information, technology, and know-how that may be used to improve the efficiency and effectiveness of a company (Park, 2010). In this view, it is feasible because the acquisition of external information, which is more important than internally generated knowledge, leads to improvements in organizational routine and, as a consequence, to an increase in overall performance (Phan and Peridis, 2000).

Transfer of knowledge is seen as an active process in which technology (together with the associated information) is transmitted between two separate entities (Bozeman, B., Rimes, H., & Youtie, J, 2015). Due to the fact that this research is being conducted in the framework of an international joint venture, knowledge acquisition occurs when an IJV obtains the information and methods of its foreign parent company. This newly obtained knowledge enables the acquired business to adjust its operations in accordance with the parent company's procedures, resulting in improved services, products, and performance for the acquired firm (Anh, 2017). As a result of the acquisition of expertise from international partners, improvements are brought about that allow the IJV to increase its organizational efficiency. Therefore, knowledge acquisition in joint ventures can be defined as the new foreign partners' knowledge that is acquired, absorbed, and applied by the joint venture to create the same production activities and management techniques, and to achieve learning objectives that are

similar to those of the original economic organizations (Nguyen & Aoyama, 2015; Sazali & Raduan, 2011).

The literature contains a large number of studies that have attempted to determine the antecedents of IJV's knowledge acquisition, with the majority of previous studies focusing on absorptive capacity (e.g., Lane et al., 2001; Lyles & Salk, 1996), social capital (e.g., Dhanaraj et al., 2004), or integrating both (e.g., Lane et al., 2004; Thi Thuc Anh, 2017; Thi Thuc Anh & Baughn, 2013). In contrast, little emphasis has been made to the impact of knowledge transfer mechanisms and formal governance mechanisms on the acquisition of expertise by international joint ventures (IJVs). In accordance with this, the purpose of this research was to determine the impact of knowledge transfer mechanisms (adaption and replication) and formal governance mechanisms (contract and control) on the knowledge acquisition process of the IJV.

As the firms acquire knowledge, they must innovate in their goods, processes, and organizational structures in order to achieve and sustain a competitive edge. Thus, a business might be regarded a generator of knowledge or a learning organization (Kushwaha & Rao, 2017). Organizations that do not acquire new information are not exposed to its positive qualities (Floyd and Lane, 2000) if the knowledge is applicable, or to its harmful features if the knowledge is irrelevant or incorrect. However, if rivals learn the information, these enterprises may still experience a decline in relative competitiveness. To conceptualize these instances, the innovation, knowledge-based view (KBV), and routines literatures are combed to discover fundamental ideas that underpin this phenomenon. Knowledge plays a vital role in enhancing an organization's competitiveness and performance (Grant, 1996). Even while the success of technology and capital transfer by foreign partners in the setting of IJVs is most easily observable, it is unclear if IJVs are effective in achieving their learning goals. Thus, IJVs develop and manage critical knowledge that create capabilities the firm can utilize to try to outperform competitors.

## **TRANSFER MECHANISMS**

### ***Adaptation***

Adaptation is the process of making changes to an organization so that it can work better in new situations (Williams, 2007). According to Chen, Hsiao, and Chu, (2014) adaptation happens when the recipient changes the information they get before they use it. A source unit's practices can be changed or combined by a receiving unit that wants to use them in a new way. Franchisees, for example, often try to improve the franchise system that they join by changing operating procedures right away in the hope that it will work better for them in their own situation (Chen et al., 2014).

Receiving units may search for and adapt significant information and practices from a source unit by adapting them to their own needs (Williams, 2007). It is only information that can be utilized in a new configuration that can be exchanged during an IJV session. According to a large body of study on a linked system, innovation, and a full company, knowledge is

dependent on where it originates from and how it is used. As a result, knowledge must be modified and rewritten in line with the organizational structure of a corporation (Penrose, 2009). Incorporated into a company's operations over time by performing the same actions over and over again, track-dependent knowledge is acquired (Cohen & Levinthal, 1990). Even while certain procedures may have worked in the parent organization's original set of circumstances, they may not be as critical in the IJV's new circumstances, and some issues may occur as a result (Madhok, 2006). It is predicted that new areas, new relationships, and new institutional contexts would alter the knowledge that has been conveyed, allowing it to be used in new scenarios (Szulanski & Jensen, 2006).

According to Pak, Ra, and Lee (2015), "adapting knowledge is a key stage in the knowledge management process and in ensuring that the information the IJV receives from external sources is appropriate for its new cultural and organizational setting." In a research conducted by Williams (2007), he discovered that flexibility is critical for successful knowledge transfer, which occurs when the information transfer has assisted the receiving business in improving its performance.

*H1: knowledge adaptation has a positive effect on IJV's knowledge acquisition.*

### **Replication**

The more receivers incorporate the senders' knowledge into their own work, the more the word "replication" is employed (Chen, Hsiao, & Chu, 2014). When high degrees of replication are applied, receiving units mimic the source practice perfectly until they achieve the same outcomes as the source. Intel, for example, employs this method when constructing new semiconductor manufacturing facilities. Engineers must ensure that the new designs and work methods are identical to the old ones (Williams, 2007). As a result, replication occurs when the receiving unit's actions are modified to be more similar to those of its partner (Chen, Hsiao, & Chu, 2014).

Williams (2007) described replication as the process of modifying existing operating procedures in order to adhere to the standards of a partner (Chen, Hsiao, & Chu, 2014). The inherent causal ambiguity of complex production processes (Lippman & Rumelt, 1982) necessitates the need for knowledge replication to the point where the organization is unable to identify essential operational knowledge. Briefly stated, replication promotes knowledge sharing since it is necessary to generate a functional duplicate of complex and ambiguous information in order for it to be shared (Winter, 1995). According to Herrgard (2000), replication facilitates frequent and in-depth interaction between receivers and senders, as well as the capacity to communicate using a common language and symbols for the transfer of information. The practice of replication ensures that the transmitted practices include pieces of information that may be valuable to the receivers of the practices (Nonaka, 1994). Therefore, replication enables a firm to perfectly replicate the activities of its parent company without having to understand the underlying phenomena or the consequences of those efforts (Williams, 2007).

The results of an empirical analysis conducted by Williams (2007) revealed that replication and adaptation may result in effective knowledge transfer and improved performance of the recipient company. Wang and Nicholas (2005) discovered that Chinese managers' replication could be measured by changes in the local Hong Kong managers' knowledge contribution to the accumulation of JV knowledge. They did this by examining the replication of the knowledge transfer process between the Hong Kong and China joint venture. Another way of putting it is that the more information the Chinese managers picked up via imitation, the more they contributed to the overall knowledge level of the JV.

*H2: knowledge replication has a positive effect on IJV's knowledge acquisition.*

## **FORMAL GOVERNANCE MECHANISMS**

### ***Contact***

According to Poppo and Zenger (2002), a contract agreement specifies the obligations and standards of each firm partner, as well as conflict resolution procedures and the attainment of important goals in the business relationship. Explicit contracts may be used to specify mutual expectations as well as precise behavioral boundaries (Parkhe, 1993). According to Rousseau (1995), a contract not only specifies behavioral patterns, but it also details the roles and obligations of the parties involved, as well as the ramifications of breaching the agreement (Y. Liu, Luo, & Liu, 2009). The contract's complexity increases inexorably, as do the promises definition, dispute resolution mechanisms, and obligations for settling conflicts. According to (Poppo & Zenger, 2002), complex contracts should contain defined roles and responsibilities, monitoring mechanisms, repercussions for non-compliance, and, above all, describe the agreed-upon outcomes or outcomes of interest.

According to (Zhang & Zhou, 2013), formal contracts are typically protected by legal systems in order to minimize managerial conflicts and ethical risks, which facilitates exchange activities such as information transmission. Constant information sharing and communication are required in order to establish formal operational procedures under such contracts (Liu, Li, Shi, & Liu, 2017a). When it comes to empirical research, a study that included 225 Chinese consumers and suppliers discovered that contracts may boost the volume and quality of information communicated (Liu et al., 2017a). Several studies, such as Liu et al. (2009), have shown that contracts may reduce opportunism and improve the performance of Chinese manufacturer-distributor dyads. According to another research (Li, Poppo, & Zhou, 2010), detailed contracts may accelerate the acquisition of explicit knowledge in 168 foreign subsidiaries in China, according to the authors.

*H3: contract has a positive effect on IJV's knowledge acquisition.*

### ***Control***

Control is based on observable decision-making skills, according to (Park & Choi, 2014). Control in an IJV may be defined as one partner's capacity to make choices in the course of their daily activities in an IJV (Choi & Beamish, 2004). The influence of control on the

knowledge acquisition process of IJV indicates the significance of control. It streamlines knowledge exchange, accelerates the consumption of organizational resources, and redefines the direction of the organization in accordance with new information (Makhija & Ganesh, 1997). Control structures are referred to and adjusted throughout time in order to manage the joint venture, and decision-making abilities are divided among partners in order to govern the joint venture (Steensma & Lyles, 2000). Furthermore, when information is shared, control is used to manage the distribution of authority and power among participants.

According to the findings of a research of 343 manufacturer-supplier interactions conducted by Zhang and Zhou (2013), formal control plays an essential role in the transfer of knowledge. According to the findings of another research carried out in Korea, control mechanisms such as operational and managerial control had a good influence on organizational learning (Park & Choi, 2014). When it comes to joint ventures involving partners from the United States of America, control has been identified as a critical tool for selective information transfer and protection. However, the Chinese partners consider that the same set of regulations is essential for selective asset transfer and asset investment protection, whilst the American partners do not (Atuahene-Gima & Li, 2002). Moreover, an unequal distribution of managerial power structures between partners may result in parental conflict, increasing the likelihood of a joint venture failing. According to Steensma and Lyles (2000), a misalignment in the ownership control structure, on the other hand, does not result in conflict or the failure of an IJV partnership.

*H4: control has a positive effect on IJV's knowledge acquisition.*

## **IJV'S COMPETITIVENESS**

Many companies should find it difficult to maintain their competitiveness in an uncertain market. While physical assets and financial capital continue to be important, the new definition of competitiveness is the effective channeling of successful development and longevity in the firm, where human capital motivates businesses to learn more and improve their performance (Phusavat, Anussornnitisarn, Patthanaturak, Kekale, & Helo, 2010). In order to be judged competitive, organizations must be able to transition from physical to value-based metrics, which involves the development of organizational performance abilities that are based on internal resources. Knowledge is critical in establishing an organization's competitive advantage (Nasimi et al., 2013). Indeed, it is the sole source of long-term competitive advantage, making it a critical company asset. According to Yeh, Lai, and Ho (2006), a company's ability to effectively use its intellectual assets in both strategic and tactical decision-making is a critical component in determining its ability to remain competitive. Competitiveness, according to Wu (2008), is described as an organization's capacity to conquer and surpass its primary rivals in terms of product quality and service, as well as speed of response. Which is aware of market developments and reacts to the requirements and possibilities presented by the market. As for IJVs' competitiveness, it refers to the extent to which IJVs perform in a marketplace, compared to their major competitors (Jiang, Bao, Xie, & Gao, 2016)

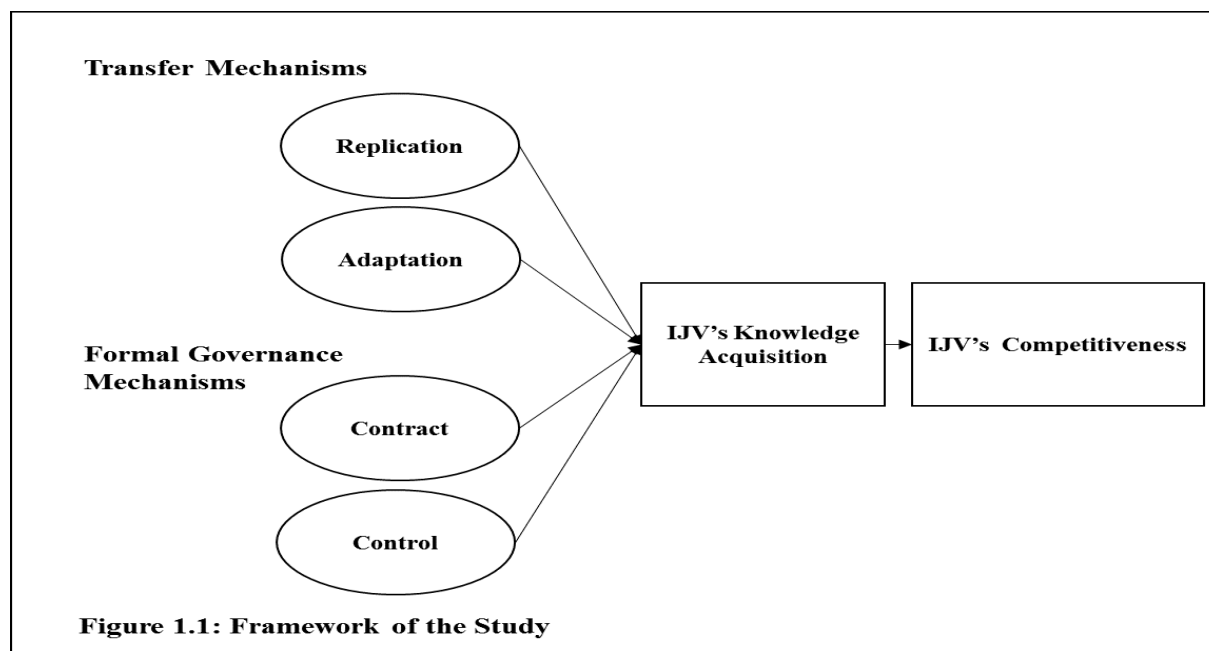


To summarize, Porter (2011) argues that competition combines parts of economic principles that preoccupy policymakers and economists as they attempt to comprehend larger-scale challenges such as prosperity and wealth creation. Organizations develop business strategies on a regular basis with the purpose of improving their competitive position. When a corporation learns how to effectively deploy its resources via the development of skills and core competencies, it achieves its goal and gains a competitive edge (Grant & Grant, 2008). This is in accordance with the knowledge-based method of operation. According to research, knowledge is an important factor in increasing a company's competitiveness and performance (Grant, 1996). Because of this, in order to gain a competitive advantage, a firm needs demonstrate its dynamic knowledge absorption abilities in its areas of expertise (Grant, 1996).

As previously discussed, knowledge plays a critical role in achieving long-term competitive advantage and performance, particularly in the technology sector (Grant, 1996). The usefulness of knowledge-based resources in establishing a competitive advantage has only been validated by a few studies, including a conceptual research study carried out in Hungary by (Hooley et al., 1996) and an empirical study carried out in Vietnam by (Hooley et al., 1996) (Zhan et al., 2009). However, little empirical research has been done to determine if and how the transfer of knowledge and resources might aid IJVs in achieving a competitive advantage in their particular markets. This is a significant gap in the literature. According to the conclusions of this study, more research into the link between transferred knowledge and resources from international partners should be conducted in the future.

*H5: IJV's knowledge acquisition has a positive effect on IJV's competitiveness.*

In the light of the presented literature, the conceptual model of the study can be designed as follows



## METHODOLOGY

### *Context and Data Source*

The research was carried out in Algeria, more precisely in the oil and gas sector. Due to the significance of hydrocarbons in Algeria, the oil and gas sectors have opted to focus on them. Hydrocarbons contribute significantly to Algeria's foreign trade. Oil and mineral fuels accounted for almost 95% of total exports in 2019. (Statista, 2022). Regarding the amount of IJVs, researchers from Algeria's National Center for Trade Register, CNRC, (2017) were informed that there were 791 IJVs in the oil and gas sectors. As a result, this provides a rich environment for investigating the variables that influence the knowledge acquisition and competitiveness of IJVs. Through two distinct survey methods: drop-collection and internet surveys. The surveys were distributed in English and French.

Over a seven-month period, the researcher distributed 326 questionnaires on oil and gas IJVs, and thanks to the researchers' persistence and frequent reminders via phone calls and visits to the workplace, as well as the use of multiple informant techniques to increase the response rate, a total of 126 questionnaires were received. Out of a total of 126 questionnaires, four were found to be incomplete. It was established that 37.42 percent of the total questionnaires submitted (122/326) were returned, representing a response rate of 37.42 percent. Because the data was acquired using drop-collection and online questionnaires, an independent sample t-test reveals that there were no differences in the mean scores of any study variables between the two groups; as a result, the survey approach seemed to have had no effect on the results. Additionally, we looked at the possibility of non-response bias by comparing the outcomes of early and late participants (Armstrong & Overton, 1977; Lambert & Harrington, 1990). These two groups were subjected to t-tests, which revealed no statistically significant differences, indicating that there was no need to be concerned about non-response bias.

### *Measurement tool*

Using the literature and findings from previous studies, we designed questionnaires to gather appropriate hypothesis testing data. The definitions used in previous studies for the variables were adopted in this study. However, certain modifications were adopted to enhance the suitability of the definitions used in the analysis of the underlying relationship (Table 1).

<b>Term</b>	<b>Definition</b>	<b>Source</b>
Knowledge acquisition	the new foreign partners' knowledge that is acquired, absorbed, and applied by IJV to create the same production activities and management techniques, and reach similarly to the original	(Lin, 2007; Nguyen & Aoyama, 2015)

	economic organizations learning objectives	
Transfer mechanisms <i>Adaptation</i>  <i>Replication</i>	a process of modifications to incorporate with new settings involves the alteration of existing operating procedures in compliance with the partner	(Williams, 2007)
Formal Governance Mechanisms <i>Contract</i>  <i>Control</i>	a contract agreement specifies the duties and rules of each firm partner, courses of action during conflict, and realization of main objectives the power of decision making in daily tasks, held by one partner	(Cannon et al., 2000; Cullen, Johnson, & Sakano, 1995; Jap & Ganesan, 2000)
IJV's Competitiveness	Reflect a venture's capabilities to conquest and surpass its main rivals through the products quality and services, and the rapidity. Which it be aware of market alterations and reacts with marketplace demands and opportunities	(Wu , 2008)

**Table 1. Operational definitions*****Measurement tool reliability***

The first step to assess the measuring tool's reliability is to examine the items loading on the variable that is set to measure it. The loading must be (0.70) or higher (Hair et al., 2016). As shown in Table 2, the results show that the lowest value loaded on the corresponding factor was (0.702), which is equivalent to the minimum level.

The next step is to examine reliability through composite reliability (CR) and Cronbach's alpha. Consequently, as mentioned in the prior studies, the acceptable minimum value for CR is (0.60–0.70) and Cronbach's alpha is (0.70) (Hair et al., 2016). Results in Table 2 show that the values of CR and Cronbach's alpha for each variable were much greater than the acceptable minimum level, which would further specify a high internal consistency in the measurement tool.

***Measurement tool validity***

There are two kinds of validity tests performed on the measurement instrument, namely, discriminant validity and convergent validity. Convergent validity tested using the average variance extracted (AVE). The acceptable level for AVE must be either 0.50 or above (Hair et

al., 2016). Results in Table 2 show that AVE's values were higher than the acceptable minimum value. To examine the discriminant validity, the square root of AVE values must be considerably greater than the highest correlation coefficient of this variable with any other variables (Hair et al., 2016).

Items	Loading	AVE	CR	R squared	Alpha
IJV's Knowledge Acquisition (KWA)		0.653	0.929	0.490	0.910
KWA1	0.804				
KWA2	0.853				
KWA3	0.873				
KWA4	0.846				
KWA5	0.782				
KWA6	0.746				
KWA7	0.742				
Transfer Mechanisms					
Replication (REP)		0.695	0.901	-	0.853
REP 1	0.853				
REP 2	0.887				
REP 3	0.828				
REP 4	0.762				
Adaptation (ADAP)		0.724	0.913	-	0.872
ADAP1	0.773				
ADAP2	0.899				
ADAP3	0.861				
ADAP4	0.865				
Formal Governance Mechanisms					
Contract (CON)		0.657	0.905	-	0.872
CON1	0.769				
CM2	0.860				
CM3	0.785				
CM4	0.835				
CM5	0.800				
Control (CTRL)		0.630	0.938	-	0.925
CTRL1	0.702				
CTRL2	0.744				
CTRL3	0.790				
CTRL4	0.812				
CTRL5	0.799				
CTRL6	0.875				
CTRL7	0.881				
CTRL8	0.826				
CTRL9	0.755				
IJV Competitiveness (COMP)		0.596	0.898	0.505	0.864

COMP1	0.726
COMP2	0.764
COMP3	0.777
COMP4	0.815
COMP5	0.783
COMP6	0.766

**Table.2 Measurement reliability test**

Results in Table 3 show that the values of the square root of AVE (on the diagonal line) were higher than the correlation coefficient of this variable with any other variables. These results indicate a high discriminant and convergent validity of the measurement tool.

	1	2	3	4	5	6
<b>(1) Adaptation</b>	<b>0.851</b>					
<b>(2) IJV's Competitiveness</b>	0.609	<b>0.772</b>				
<b>(3) Contract</b>	0.434	0.507	<b>0.810</b>			
<b>(4) Control</b>	0.562	0.515	0.572	<b>0.794</b>		
<b>(5) IJV's knowledge acquisition</b>	0.588	0.711	0.465	0.486	<b>0.808</b>	
<b>(6) Replication</b>	0.605	0.638	0.571	0.488	0.643	<b>0.834</b>

**Table 3. Square root of AVE and correlation coefficients*****Hypothesis testing:***

After confirming the reliability and validity of the study's measurement and structural models, the subsequent stage was to test the hypothesized relationships. The hypotheses were run in order to answer the hypotheses of this paper, simultaneously answering the paper's research questions. To conclude whether the hypothesis is statistically significant or not, the researchers have applied the bootstrapping technique entrenched with the Smart-PLS 3.0. Moreover, with the intention of obtaining the statistical t-value and the standard error, the bootstrapping was performed with 5000 samples and 122 cases. Subsequently p-values with 0.05 significance level was created (Hair et al., 2016; Henseler et al., 2009). Table 4 below shows the summary of hypotheses testing.

From the findings, there is only one significant hypotheses of four of knowledge acquisition determinants which are (H1) replication has a significant positive influence on IJV's knowledge acquisition. Where its result were found ( $B= 0.397$ ,  $T= 2.519$ ,  $P= 0.012$ ). However, three hypotheses about the IJVs' determinants were insignificant which are (H2) adaptation has a significant positive influence on IJV's knowledge acquisition, (H3) contract has significant positive influence on IJV's knowledge acquisition, and (H4) control has significant

positive influence on IJV's knowledge acquisition. The evidence on the insignificance of each H2, H3, and H4 were based on their results ( $B= 0.257$ ,  $T= 1.611$ ,  $P= 0.107$ ), ( $B= 0.063$ ,  $T= 0.550$ ,  $P= 0.582$ ), and ( $B= 0.112$ ,  $T= 1.168$ ,  $P= 0.243$ ). Finally, the last hypothesis for the IJV's knowledge acquisition outcome (H5) IJV's knowledge acquisition has a positive effect on IJV's competitiveness. This hypothesis was found significant with a result of ( $B= 0.711$ ,  $T= 13.457$ ,  $P= 0.000$ ).

<b>Hypotheses</b>	<b>Relationship</b>	<b>Coefficient</b>	<b>T value</b>	<b>Result</b>
<b>H1</b>	<b>REP -&gt; KWA</b>	0.397	2.519	Supported
<b>H2</b>	<b>ADAP -&gt; KWA</b>	0.257	1.611	Not Supported
<b>H3</b>	<b>CON -&gt; KWA</b>	0.063	0.550	Not Supported
<b>H4</b>	<b>CTRL-&gt; KWA</b>	0.112	1.168	Not Supported
<b>H5</b>	<b>KWA -&gt; COMP</b>	0.711	13.457	Supported

**Table 4. Results of the Structural Model**

## **DISCUSSION AND CONCLUSION**

There has been an increase in the number of studies on knowledge acquisition in the setting of IJVs during the last ten years or so. Particularly where international joint venture is regarded as a fundamental vehicle for accessing, learning, or absorbing advanced companies' embedded capabilities, technology, and knowledge, which, in turn, are regarded as the most valuable resources for achieving a sustainable competitive advantage and improved performance. Consequently, this paper has investigated how different determinants such as transfer mechanisms and formal governance mechanisms play an important role in the process of knowledge acquisition in IJVs, and this paper goes on to show that there is a link between an IJV's knowledge acquisition and the competitiveness of the IJV in this paper. So far, the findings show that, in terms of the two dimensions of transfer mechanisms, replication is substantial and adaptation is minor in terms of knowledge acquisition from a foreign partner, according to the findings. For example, contracting and controlling formal governance processes were shown to be unimportant. On the other hand, it was discovered that the IJV's knowledge acquisition was positively associated to the IJV's competitiveness. As a consequence, this work has offered an extra research with empirical findings in order to contribute to the literature.

To summarize, this work makes a significant contribution to the body of knowledge in terms of theory, empirical evidence, and application. First and foremost, this study has developed a complete two-fold model that is based on a framework that has never been before integrated. When it comes to IJV knowledge acquisition from a foreign partner, the study's framework proposes two determinants (transfer mechanisms and formal governance mechanisms) and one consequence (IJV's competitiveness), all of which have not been studied in the literature on IJV knowledge acquisition from foreign partners. In conclusion, this paper has revealed a more

complex and fine-grained picture of IJVs learning, thereby responding to the call for a systematic overview of the underlying mechanisms and outcomes of knowledge transfer (Van Wijk et al., 2008) and thereby enriching our understanding of the IJVs learning process (Salk & Lyles, 2007), particularly in the stage of post-knowledge transfer.

First and importantly, by addressing the study's conceptual framework, this paper has offered empirical data that will be useful for future research into relationships between its variables. The outcomes of this study have provided crucial practical implications in connection to the knowledge acquisition of IJVs in the setting of Algeria, as a result of this approach. Those who make policy in Algeria, such as the authorities in the Algerian Ministry of Industry and Mines, the Algerian National Agency for Investment Development, Sonatrach (the country's largest oil company), and finally those who manage joint ventures in the oil and gas industry, will find the findings of this study useful, particularly in the design of policies and entrepreneurship programs in the country. Such research can aid in the understanding of knowledge acquisition and the methods of acquiring effective knowledge transfer through the enhancement of the learning capacity of IJVs; furthermore, this research may inspire practitioners such as managers to make necessary changes in organizational practices in order to support the commitment to learning of IJVs. Furthermore, this research provides useful insights into the knowledge management of joint ventures, particularly in an unpredictable economic climate. Finally, the findings of the thorough evaluation may be used by policymakers to develop more effective policies for international joint ventures. Such information and awareness may weigh the importance of making the proper decisions for policymakers in order to avoid the failures of IJVs.

### **Limitations and Directions for Future Research**

As with any other scientific study, this one has limits and suggests future avenues for investigation. The first constraint is IJVs' acquisition of knowledge from foreign partners, for which this article proposes two antecedents and one determinant. As such, it is highly advised that future research validate this model by include other critical factors of knowledge acquisition, such as environmental unpredictability (Battistella et al., 2016). This advice is based on recent developments in the Algerian nation. Algeria has a relatively underdeveloped economy, which results in significant gaps in legal and financial infrastructure. These gaps contribute to environmental uncertainty, which manifests itself in highly unpredictable market and consumer demand, hostile competition, and abrupt changes in legal, political, and economic structures.

Additionally, the COVID-19 epidemic has wreaked havoc on every sector of the world economy and society. Likewise, it is hard to foresee the pandemic's long-term influence on science, technology, and innovation. In this context, it is important to consider some of the several (and sometimes contradicting) potential trends for how the pandemic may effect science, technology, and innovation in terms of total investment, digital infrastructure, openness, inclusion, and global cooperation. Additionally, the COVID-19 pandemic and its impact on socioeconomic activity may have a long-term influence on research, technology, and innovation (STI). Additionally, it may have an impact on the goal, formulation, and

implementation of science, technology, and innovation policies. STI has a variety of consequences on many players, including businesses, research institutions, universities, and the existing and future STI work force. These advances, in turn, will have a significant influence on the pace and direction of future innovation, as well as its effects on human well-being and market dynamics. As a result, future research must focus on the impact of environmental uncertainty on the acquisition of new technological knowledge.

Another drawback is that our empirical analysis cannot account for changes over time due to the cross-sectional sample used in the research. Future study should use a longitudinal design to circumvent the limitations of the connection. Using a longitudinal strategy, future study may address this problem. This work was done in Algeria, one of the nations that has recently undergone economic transformation, and Algeria is defined by its unique economic condition (socialist system), history, and culture. As a consequence, extra caution should be used when extrapolating the findings of this research to other nations at various stages of economic change. Although this research was done in the oil and gas business, the findings cannot be extended to other sectors. We highly advocate undertaking a study on the electronic and electric industry, since this sector is rapidly growing as a consequence of global technological improvement. Additionally, this sector is Algeria's second most lucrative industry, after oil and gas.

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