

# **Value Co-Creation in International University–Industry Collaboration: A Conceptual Framework**

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## **Abstract**

University–industry collaborations (UICs) worldwide have become increasingly internationalized. International university–industry collaborations (IUICs) is not only a trend, but it is almost a required practice for any individual, research project or country that would search for visibility on the business and technology section. However, although the existing empirical evidence shed light on the co-creation of UICs and its relationship with performance, the determinants of UICs co-creation and the mechanisms that UICs co-create value in international context remain unclear, and empirical studies are particularly lacking. Thus, this study aims to fill these research gaps and clarify key determinants of IUICs value co-creation and strategies of value co-creation that further impact IUICs performance.

The purpose of this study is to propose a theoretical framework to clarify the relationship among culture diversity, social capital, value co-creation strategies and empirically examine their effects on international university–industry collaborations performance. To develop a theoretical framework, we developed a set of propositions based on literature pertaining to the culture diversity, value co-creation strategies and social capital in the context of international university–industry collaboration. The importance of this proposal is to develop a value co-creation model for IUICs principal investigators to understand the determinants and process of value co-creation by value-based view, knowledge creation and social capital theory. The linking of culture diversity, social capital, value co-creation strategies and international university–industry collaborations performance may provide a good picture to clarify the motivations of various value co-creation management activities in international university–industry collaborations.

**Keywords:** culture diversity, social capital, value co-creation strategies, international university–industry collaborations performance

## **1. Introduction**

### **1.1 Background**

Universities nowadays operate in a challenging and turbulent environment that is characterized by fast technological progress, growing costs, intense competition, more demanding stakeholders, and institutional pressures. These challenges compel universities to rethink source of their competitiveness (Plewa and Quester 2008). Therefore, in response to such challenges, many universities have greatly separated from the roles of teaching and researching and increased their participation actively in society by building collaborative relationships with firms and business communities locally or internationally. Establishing university–industry collaborations (UICs) can be highly valuable by academic engagement and commercialization because the collaboration co-creates value to enrich and improve educational and research objectives and helps to decrease the gap between the academic and business communities (Frasquet, Calderón, and Cervera , 2012). However, with the

acceleration of globalization, cultural, economic and institutional environments are neither constant across geographies nor overtime. Accordingly, countries evolve to host distinctive resources and technological capabilities (Carlsson, 2006; Pavitt and Patel, 1999); much of which cannot seamlessly transcend geographical boundaries (Jaffe, Trajtenberg and Hendersen, 1993). Thus, UICs worldwide have become increasingly internationalized. International university–industry collaborations (IUICs) is not only a trend, but it is almost a required practice for any individual, research project or country that would search for visibility on the business and technology section. Besides the apparent improvement of domestic scientific capabilities through the exchange of experience and knowledge, it often provides international access to facilities and environment that may not be available locally, for example, especially after the advent of the so-called ‘big science’ (computer facilities) and entrepreneurship climate (Giudice 2012; Powers & McDougall, 2005).

Consequently, in order to gain superior IUICs performance and long-term relationship, IUICs need to maintain a steady stream of novel products, patents, services, or processes by co-creating value between partners. Drawing from Service-Dominant (S-D) Logic (Prahalad & Ramaswamy, 2004), value co-creation is defined as joint activities by parties involved in direct collaborations, targeting at contributing to the value that appears for one or both parties (Grönroos, 2012). UICs are increasingly representing themselves as co-creators of novelty, and they are giving increasing attention and resources to innovation (Lam, Hill, & Ng, 2012). However, although the existing empirical evidence shed light on the co-creation of UICs and its relationship with performance (Grimpe & Hussinger, 2013 ; Mindruta, 2013), the determinants of UICs co-creation and the mechanisms that UICs co-create value in international context remain unclear, and empirical studies are particularly lacking. Moreover, many principal investigators of UIC project are stressed to articulate the relationship between their competitive strategy and its intellectual resources and capabilities. They do not have well-developed strategic models that help them to link value co-creation processes to business strategy, and they are not sure of the way to translate the goal of making their collaboration network more intellectual into a strategic action. They need a theoretically sound model of what we call value co-creation strategy. Thus, this study aims to fill these research gaps and clarify key determinants of IUICs value co-creation and strategies of value co-creation that further impact IUICs performance. The theoretical framework developed in this study is built on theoretical background from organizational theory.

Prior studies suggested that international alliances can generate a rapid access to novel resources and innovation (Lee et al., 2013). However, it is also critical to deliberate unseen costs related to “liability of foreignness in the host country,” which includes culture, legal and business norms (Hitt et al., 2009). It needs a high degree of adaptability and flexibility from the project management team to align different objectives and motivation factors. For example, in the context of knowledge transfer from developed to a developing economy, societal culture is the most significant factor in shaping knowledge transfer success (Kedia & Bhagat, 1988). The reason of cultural constraints on international knowledge transfer

collaborations is that knowledge transfer to developing countries depends on cultural compatibility between the receiving and transferring nations. While cultural differences and their impact on management field are broadly studied topics (Hofstede, 1993, 1994; Schoefield, 2013), there are fewer studies on cultural implication in IUICs context. Thus, this study adopts culture diversity as the key determinant for value co-creation in IUIC.

Over the past two decades, social capital theory has appeared as a main theoretical explanation of organizational innovation and success (Maurer et al., 2011). Prior studies have highlighted the relationship between social capital and its organizational performance (Tortoriello & Krackhardt, 2010). Although their results did present valuable insights, but do not shed light on the resource transfer processes that link international members' social capital and value co-creation mechanisms to its performance, especially in international university-industry collaborations setting. Moreover, related empirical results have been questionable, including negative associations (Edelman, Bresnen, Newell, Scarbrough, & Swan, 2004), positive (Subramaniam & Youndt, 2005), and insignificant (Batjargal, 2003) between measures of social capital and organizational performance. Furthermore, whether social capital plays as the moderator or the mediator on organizational performance is still open to question. Therefore, this study adopt IUICs value co-creation and social capital to explorer their interaction effects on IUIC performance. Specifically, this proposal extends understanding in the field of UIC research in international context by examining the effect of value co-creation on the performance and the moderating role of social capital on the relationship between value co-creation and IUICs performance.

Our proposal contributes to the literature on the value co-creation of UIC by highlighting determinants and moderators of university–industry interaction for value co-creation in international context, and by providing preliminary evidence that certain value co-creation strategies (exploration, institutional entrepreneurship, exploitation, and combination) are particularly crucial for mediating culture diversity and IUIC performance in IUIC context.

## **1.2 Purpose of the Study**

The goal of this study is to develop a value co-creation model of IUIC. Based on the value-based view or Service-Dominant (S-D) Logic (Grönroos, 2008; Prahalad & Ramaswamy, 2004) notes that co-creation requires direct interaction between the co-creating parties which is a consequence of joint activities (e.g. Grönroos, 2011; Grönroos & Ravald, 2011), this proposal hopes to analyze how value is co-created from university–industry collaborations in international context for increasing IUIC performance. To achieve this goal, this study we derive a comprehensive value co-creation model of IUIC that follows this general progression by examining research on the antecedents, moderators, and outcomes of UIC research in international context. We build a framework for examining recent

developments and considering gaps within and across disciplines.

### **1.3 Research Questions**

Therefore, there are two specific research questions in this paper:

1. What are the critical factors that may impact the value co-creation process in international university-industry collaboration?
2. How value is co-created in international university-industry collaboration?
3. What is the contrasting interaction effect of value co-creation with social capital on IUI performance?
4. How to measure international university-industry collaboration performance?

## **2. Literature Review**

Integrating mainly from Hofstede, (2010), Yang, Fang, and Lin (2010), Nahapiet and Ghoshal (1998) and Perkmann et al. (2013), this proposal suggests culture diversity as the determinant that may impact IUI value co-creation strategies, value co-creation strategies as the mediator between culture diversity and IUI performance, social capital as the moderator between value co-creation strategies and IUI performance and IUI performance as the dependent variables in this study. This proposal argues that an IUI project's culture diversity are positively related to value co-creation strategies, value co-creation strategies are positively related to IUI performance while social capital will be positively moderate the relationship between value co-creation strategies and its performance. This section includes four parts: (1) Value co-creation strategies, (2) culture diversity, (3) Social capital and (4) International university-industry collaboration performance.

### **Value co-creation strategies**

Grönroos (2012) argues that value co-creation is defined as joint activities by parties involved in direct interactions, aiming at contributing to the value that emerges for one or both parties. As the term suggests, co-creation involves a symbiotic relationship between a firm and its primary stakeholders (Kohli & Grover, 2008), wherein the stakeholders (i.e., the focal firm with its partners or clients) customize and coproduce products/services (Payne et al. 2008). Accordingly, in the context of IUI, a growing trend in today's business and academic environment is co-creation of value by a firm and its primary collaborating universities. Links between universities and industry are important mechanism to develop and commercialize the fruits of university research. Such links are also seen as contributing to technological progress and economic well-being (Kneller et al., 2014). From automobile companies such as TOYOTA to information technology companies such as ACER, Google, and ASUS, an increasing number of firms are jumping on the co-creation bandwagon (e.g., Prahalad & Ramaswamy 2004; Ramaswamy 2009). A primary reason for this growth in alliances is that partnerships generally help increase both university and firm value (Kale and Singh 2009; Swaminathan and Moorman 2009). More recently, universities, with alliance industry

partners, have started to see the merit of jointly working toward the success of the collaborating alliance, thereby fuelling a trend toward co-creating value in such ventures (e.g., Prahalad and Ramaswamy 2004). However, despite this focus on co-creation of value in general, and on cocreation within IUIC alliances in particular, little is known about mechanisms underlying value cocreation in such settings.

At the same time, technological complexity, knowledge intensiveness and specialization are rising in many UIs (Aarikka-Stenroos & Jaakkola, 2012), making the universities and the industries more reliant on each other's knowledge and resources (Nordin & Kowalkowski, 2010; Tuli et al., 2007). Therefore, wide-ranging collaboration and interaction are consequently noticeable, and of critical importance in value co-creation contexts characterized by complicated exchange. Thus, it raises the research question that how value is co-created through IUIC knowledge interaction. In order to clarify such concerns, one theoretical perspective that we found potentially useful in understanding value co-creation mechanisms within IUIC relationships is the knowledge creation theory. Drawing from knowledge-based view and knowledge creation theory, since knowledge is knowledge-based resource is one of the key valuable resources that are central to competitive advantage (Barney, 1991; Prahalad & Hamel, 1990). Firms increasingly more depend on creating and building knowledge as a necessary condition to endure in their respective competitive marketplace (Nonaka, 1994). Thus, in the context of IUIC, knowledge creation becomes the key process to co-create value between universities and industries. Organizational knowledge creation is “the capability of a company as a whole to create new knowledge, disseminate it throughout the organizational and embody it in products, services, and systems” (Nonaka & Takeuchi, 1995). Knowledge creation is a continuous, self-transcending process through which one obtains new knowledge to transcend the boundary of the old self into a new self. In knowledge creation, micro and macro -interact with each other, and changes occur at both the macro and the micro-level (Nonaka et al., 2000). Therefore, according to Yang et al (2010), this proposal adopts organizational knowledge creation strategies to explicate the main mechanisms of value co-creation process in IUIC context. I adopt these four modes of organizational knowledge creation strategies as value co-creation strategies to explicate the knowledge creation process for value co-creation in the interaction between organizations and their environment. Based on the structure of Nonaka's SECI process, they substitute the individual level based tacit/explicit knowledge into organizational level based private/public knowledge as the basic elements for conversion. Accordingly, there are four new strategic actions (EICE model: Exploration, Institutional Entrepreneurship, Combination strategies and Exploitation) of knowledge creation are developed through the conversion of private knowledge and public knowledge. The circulation of these four knowledge conversion modes constitutes the value co-creation strategies in this proposal. This proposal adopts these four modes of organizational knowledge strategies as value co-creation strategies to explicate the phenomenon of value co-creation process in the IUIC setting.

*Mode one: Exploration strategies.* Exploration strategies are the process of converting new

private knowledge through firm-specific unique knowledge. It is also a strategy for an organization to rise its intellectual capital by co-creating its unique private knowledge within its organizational boundary (Ichijo 2002). In IUICs context, exploration emphasizes on the importance of integration for disseminating knowledge within the IUIC project's boundaries. Exploration may also occur in value co-creation that is full up with new private knowledge, which is created by fusing together previously separate private knowledge.

*Mode two: Institutional Entrepreneurship strategies.* Institutional entrepreneurship strategies are the process of articulating private knowledge into public knowledge. It also represents the activities of actors who have an interest in particular institutional arrangement and who leverage resource to transform existing institution or to co-create new ones (DiMaggio 1988; Rao, Morrill & Zald 2000; McGuire et al., 2004). In IUICs context, these publicized struggles include moves by IUICs to persuade project members to standardize new practices (Greenwood, Suddaby, & Hinings, 2002), and software IUICs supporting new technological standards (Garud, Jain, & Kumaraswamy, 2002).

*Mode three: Combination strategies.* Combination strategies are the process of converting public knowledge into more complex and advanced sets of public knowledge. It also denotes the synthesis and application of current and acquired public knowledge (Kogut and Zander 1992; Nahapiet and Ghoshal 1998). In IUIC context, the city region of Manchester develop a shared vision of the future of business-university linkages to create public own 'Knowledge Capital' is one example (Harper & Georghiou, 2005).

*Mode four: Exploitation strategies.* Exploitation strategies are the process of transforming public knowledge into firm-specific private knowledge. It also means enhancing the intellectual capital of a firm with existing public knowledge (Ichijo 2002). In IUICs context, public knowledge includes such items as industry best practices. Standard Operation Procedure (SOP) is one example of best practices now in public domain. For IUIC projects, in order to make the best use of SOP, they need to combine the different SOP experiences that are available in public domain such as universities, conference, books or even contingent workers (Matusik & Hill, 1998).

### **Culture diversity**

Drawing from Hofstede's culture studies, culture is the collective programming of the mind that distinguishes the members of one group or category from others. There are four dimensions of culture from Hofstede that together describe national culture: individualism (IDV), uncertainty avoidance (UAI), masculinity (MAS) and power distance (PDI) (Hofstede et al., 2010). Culture issues are considered as important factors that may impact organizational innovation and performance (De Brentani et al., 2010; Ely & Thomas, 2001). For example, in New Product Development (NPD) study, recent studies include international context and offer evidence about "softer" dimensions that can contribute to successful product development (De Brentani et al., 2010). As general findings show, successful outcome in global NPD contributes to both the firm's international new product strategy and intangible organizational dimensions such as a strong global innovative culture, and cultural

understanding.

Moreover, Griffin, (1992) explained the dominance of Japanese production and management techniques and their failure in western countries by cultural differences. Nakata and Sivakumar (1996) also identified links between Hofstede's dimensions of national culture (Hofstede et al., 2010) and the initiation and implementation stages of NPD. According to studies above, these results suggest that cultural diverse teams act as a critical role for successful international product development because cultural diversity affects the mentioned intangible organizational dimensions. However, the impact of national culture on IUIC has rarely been considered in academic research. This proposal tries to study the impact of culture diversity on value co-creation process in IUIC context to fill this gap. I define culture diversity as the degree of heterogeneity in national cultural background in this proposal.

### **Social capital**

Since Nahapiet and Ghoshal (1998) proposed a model to explicate how social capital may facilitate the creation of new intellectual capital, and this relationship has subsequently been empirically tested and confirmed by recent organizational studies (Tsai and Ghoshal, 1998; McFadyen and Cannella, 2005; Smith et al., 2005). Derived from these findings, this proposal thus adopted social capital theory to explain the value co-creation phenomena. The main idea of social capital theory is the networks of relationships that constitute a valuable resource for the conduct of social affairs. They also provide their members with 'the collectivity-owned capital, a "credential" which entitles them to credit, in various senses of the word' (Bourdieu, 1986, p. 249). While much of this capital is embedded within networks of mutual recognition and acquaintance (Burt, 1992), network ties provide access to these resources. Network ties influence the development of intellectual capital primarily through the ways in which it affect access to parties for exchanging knowledge and participating in knowing activities (Nahapiet & Ghoshal, 1998).

Since these network social ties are channels for information and resource dissemination, an actor may gain access to other actors' resources through social interaction (Tsai and Ghoshal, 1998). Such access allows innovators to stride across formal levels and lines in organization to find what they need. Within IUICs, social interactions among industrial and university partners facilitate the establishment of common interest and blur boundaries of those organizations. In this sense, an individual IUIC project has more opportunities to exchange and combine its professional knowledge-based resources with other firms. Outsidess IUICs, how key employees interact with vital network stakeholders will be an important sign of the value co-creation they can draw upon during the exchange and combination process (Nahapiet & Ghoshal, 1998; Smith et al., 2005). Melkers & Kiopa (2010) argue that scientists with international experiences will be more possible to have collaborative networks of international scope. Many U.S.-born faculty members have also formed international ties earlier in their careers, through postdoctoral fellowships, doctoral training, or other professional experiences. Evidence suggests that these ties can be important in forming international collaborative ties (Jöns, 2009). They argue that the human and social capital

factors that explain whether or not an academic researcher in science and engineering has an international collaborator. Further, the analysis also addresses the factors that differentiate the specific resources resulting from those international ties. Thus, this proposal argues that social interaction in international ties represent as the main mechanism to connect social capital and professional value co-creation. An IUIIC with better social capital is likely to generate higher levels of professional value co-creation.

### **International university–industry collaboration performance**

As to the meaning of the IUIIC value co-creation, it indicates that to transform the international project’s intellectual resource or competence into knowledge embedded in industry context via appropriate value co-creation transformation mechanisms like EICE model proposed in this proposal. Besides, Grant (1996), Kogut and Zander (1992) pointed out that organization could recombine existing knowledge or new knowledge to be knowledgeable asset of organization through integration and learning. Therefore, the final outcome of the knowledge creation process for value co-creation contributes to the increase of both quality and quantity of organization’s existing knowledge base—the knowledge asset.

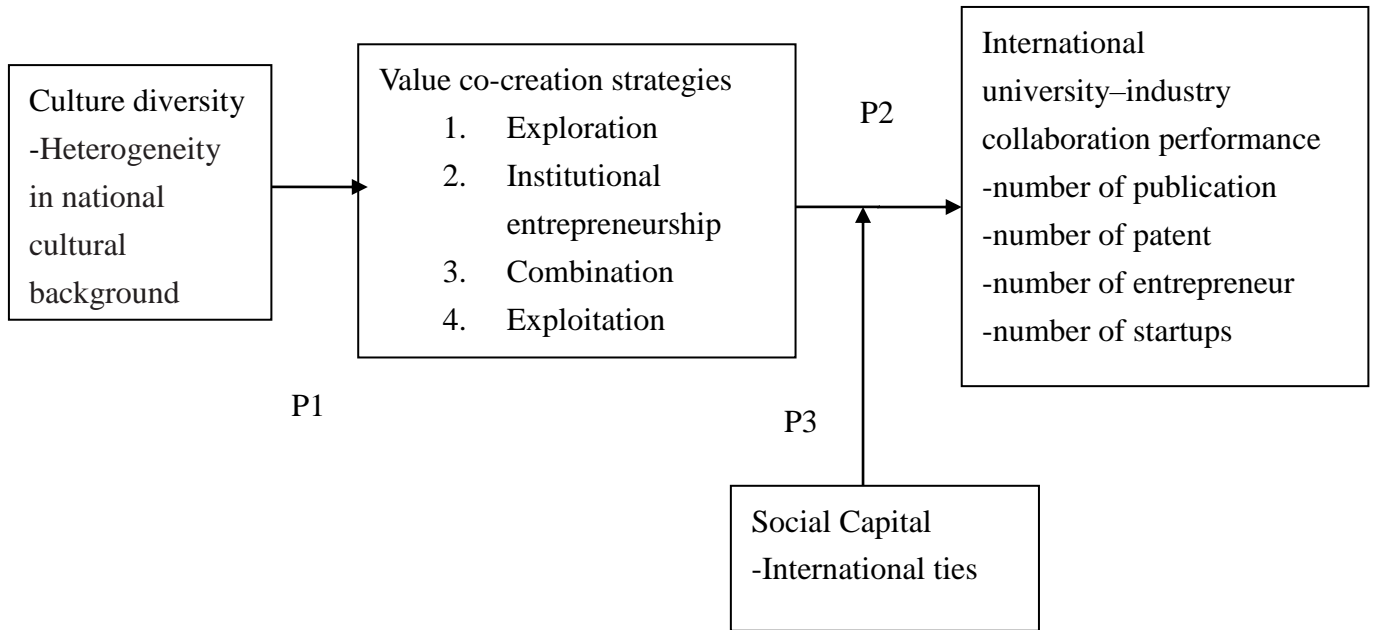
In sum, drawing from Perkmann et al., (2013), this proposal takes the knowledge asset as international university–industry collaboration performance which may be identified into two dimensions: commercialization and academic engagement output. First, commercialization output usually involves the licensing and patenting of inventions as well as academic entrepreneurship (O’Shea et al., 2008; Rothaermel et al., 2007). Commercialization is seen as a main example for creating academic impact because it constitutes measurable, immediate market approval for outputs of academic research (Markman et al., 2008). Second, academic engagement output usually means knowledge-related collaboration by universities with industrial partners. These interactions contain formal activities such as consulting, contract research, and collaborative research, as well as informal activities like providing ad hoc advice and networking with practitioners (Abreu et al., 2009; D’Este & Patel, 2007; Perkmann et al., 2013). Thus, this proposal adopts four proxies (number of publication, number of patent, number of entrepreneur, number of startups) to represent international university–industry collaboration performance.

### **Tentative framework**

Figure 1 “Tentative Framework” summarizes the relationships proposed here among culture diversity, value co-creation strategies, social capital and international university–industry collaboration performance



**Figure 1 Tentative Framework Tentative Theoretical Framework**



### 3. Proposition development

#### Culture diversity and value co-creation strategies

In IUICs context, the internationalization of IUICs’ production and R&D activities contribute to a heterogeneous internal human resource and to cultural diverse interaction between Universities-Industries partners. Therefore, the concern of cultural diversity is becoming a key issue in IUICs. On the one hand, project teams with higher cultural diversity are realized to be more creative, cultivate more and better alternatives and have a well market understanding (Ely & Thomas, 2001; Watson et al., 1993). On the other hand, this view on diversity might be too optimistic as teams with high cultural diversity can also experience difficulties for instance regarding conflicts and creating cohesion (Kochan et al., 2003). Adler (2003) also recognizes a higher stress level in international teams due to initial lack of trust and differing perceptions of communication messages. These aspects make it hard for multicultural teams to realize their potential. Accordingly, this proposal suggests proposition 1:

**P1: *The degree of culture diversity is quadratically (in an inverted U-shape) related to the degree of implementation of value co-creation strategies in international university–industry collaboration.***

#### Value co-creation strategies and international university–industry collaboration performance

Drawing upon the concepts of organizational knowledge creation strategies (Nonaka, 1994; Yang et al., 2010), this proposal proposes ‘value co-creation strategies’ as the IUIC project’s ability or process to integrate existing knowledge-based resources to co-create new value.

This proposal extends Nonaka and his colleagues' efforts by establishing value co-creation strategies on the basis of EICE process (exploration, institutional entrepreneurship, combination, exploitation): knowledge created through the conversion of private and public knowledge for value creation. Since organizational knowledge creation process as the precondition for value co-creation in IUI, this study argues that combination and exchange as two main mechanisms to transform value co-creation process into IUI performance (Moran & Ghoshal, 1996).

While the IUI project play as an entity that creates knowledge continuously (Nonaka & Toyama, 2003), this proposal argue that IUI organization's critical role in transforming existing organizational knowledge to new knowledge or value depends on four modes of value co-creation creation: exploration, institutional entrepreneurship, combination, exploitation. All these modes are interacted between university, industry and their international environment to drive the value co-creation process. However, value created in the IUI is the cornerstone of many functions in the IUI, such as creating publication, patent, germinating entrepreneur, cultivating startups, and developing new products and technology (Perkmann et al., 2013). The functions of co-created value imply that IUI performance in terms of product development, publication, innovation, and competitive advantage is greatly determined by co-creation of value at the individual, organization and environment level (Nonaka, 1994). In this proposal, the IUI's performance means the commercialization and academic engagement output (Perkmann et al., 2013). Thus, according to the notes above, this study suggest proposition 2:

***P2: The degree of implementation of value co-creation strategies is positively related to international university–industry collaboration performance.***

### **The moderator role of social capital on the relationship between value co-creation strategies and international university–industry collaboration performance**

Since Nahapiet and Ghoshal (1998) propose a model that indicates social capital may facilitate the creation of new intellectual, this relationship has been empirically tested confirmed by recent organizational studies (Tsai & Ghoshal, 1998; McFadyen & Cannella, Jr, 2005; Smith et al, 2005). Tsai and Ghoshal (1998) also argue that social capital will contribute to the ability of the organization to create value in the form of innovations. According to these arguments, this study adopted social capital theory to explicate these value co-creation in IUI. The main idea of social capital theory is the networks of relationships that constitute a valuable resource for the conduct of social affairs. They also provide their members with 'the collectivity-owned capital, a 'credential' that entitles them to credit, in various senses of the word' (Bourdieu, 1986, p.249). While much of this capital is embedded within networks of mutual recognition and acquaintance (Burt, 1992), network ties provide access to these resources. Network ties, or the structural dimension of social capital, influences the development of intellectual capital primarily through the ways in which it

affect access to parties for exchanging knowledge and participating in knowing activities (Nahapiet & Ghoshal, 1998).

IUIC will generate added value by accumulating and using social capital (Melkers & Kiopa, 2010). Global ties facilitate relational contracting with international partners in external networks, and both university and industrial partners enjoy several advantages over principal investigator in accumulating social capital. Since these international ties are channels for information and resource flows, through social interaction, an actor may gain access to other actors' resource (Tsai & Ghoshal, 1998). Such access allows innovators to go across formal levels and lines in organization to find what they need (Kanter, 1988). Inside IUIC project, social interactions among different partners facilitate the establishment of common interest and blur boundaries of those organizations. An industrial partner has more opportunities to exchange and combine its knowledge-based resources with other university partner. Outside IUIC project, how key IUIC members are interacted to important international stakeholders will be an important sign of the knowledge they can draw upon in the exchange and combination process (Nahapiet & Ghoshal, 1998; Smith et al., 2005). The resulting social capital is the combination of resources that the social network contains and that can be mobilized (Bourdieu, 1986; Nahapiet & Ghoshal, 1998). Consequently, social capital seems to be a catalyst for the influence of value co-creation on IUIC performance. Thus, I suggest here that social capital should have a positive effect on the effectiveness of value co-creation process, especial in IUIC performance. If faced with the likelihood of failure in IUIC performance, principal investigator without sufficient international ties are likely to give up mid-way through value co-creation mechanisms rather than persisting through the value co-creation process until reaching a successful result. As such, the aspect of social capital would appear to be a critical component of effective value co-creation strategies for IUIC performance. Therefore, I offer the following proposition 3:

***P3: The positive influence of the degree of implementation of value co-creation strategies on international university–industry collaboration performance will increase when international university–industry collaboration project possess higher levels of social capital.***

#### **4. Discussion and Conclusion**

The importance of university–industry collaborations have been acknowledged by a number of scholars and a variety of research streams shed light on different value co-creation issues in organizations, project teams, and networks (see for example, Emerson, Nabatchi, & Balogh, 2011; Hackman, 2011; Jonsen et al., 2013; Wilson, O'Leary, Metiu, & Jett, 2008). However, we know relatively little about the value co-creation processes and dynamics within university–industry collaboration in international context.

This proposal contributes to UIC research by providing a conceptual model for describing and evaluating the determinant and moderator of IUIC value co-creation and their effects on IUIC performance. Value creation researchers have begun to explore innovation in UIC setting, and provided significant evidence as to the importance of value co-creation (Lam et

al., 2012; Schoefield, 2013), little is known about why and how to co-create value within the international University-Industry collaboration relation, and empirical effort is particularly lacking. Moreover, we know little about whether or how culture diversity and social capital are engaged in issues of value co-creation in IUIIC. Because the existing literature on value co-creation mechanisms, social capital and culture diversity in IUIIC research has remained surprisingly silent on this important matter, this study seeks to fill the current theoretical and empirical gap. Therefore, theoretically, it is important to develop a value co-creation model for principal investigator to understand the determinants and process of value co-creation by value-based and social capital theory. The linking of culture diversity, social capital logics and value-based theory may provide a good picture to clarify the motivations of various value co-creation activities in IUIIC context.

### ***Theoretical Implications***

First, the importance of this paper will contribute to IUIIC research by providing a conceptual model for describing and evaluating an IUIIC's value co-creation process and its relationship to IUIIC performance from the perspectives of culture diversity and social capital. IUIIC researchers have begun to explore value co-creation in IUIIC setting, and provided significant evidence as to the importance of new value, little is known about why and how new value is co-created in the international context, and empirical effort is particularly lacking. Therefore, theoretically, it is important to develop a value co-creation model for IUIIC researcher to understand the determinants and process of value co-creation by integrating culture diversity, social capital and value-based theory. The complement logics culture diversity, value co-creation and social capital theory may provide a more complete picture to clarify the motivations of various strategic value-co-creation management activities in IUIIC.

### ***Managerial Implications***

This theoretical framework may have several implications for principal investigator in IUIIC's project. Although furthermore empirical studies are needed, it beginning to appear that comprehending the strategic model of value co-creation process may help principal investigator to make effective strategies to co-create new, innovative knowledge and identify culture and social capital factors, which may decrease or enhance the value co-creation in IUIIC context. Hence, this framework provides a practical way of managing the IUIIC's value co-creation. Rather than focus on managing the discrete set of determinants, principal investigator may reconcile culture diversity, value co-creation mechanisms factors and social capital factors to enhance IUIIC performance.

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