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## Article

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Global Business & Finance Review (GBFR)

## Provided in Cooperation with:

People & Global Business Association (P&GBA), Seoul

*Suggested Citation:* Cui, Ge-Qi; Jin, ChangHyun (2020) : The impact of corporate top executives' intellectual capital on organizational effectiveness: Moderating effects of cultural values and business performance, Global Business & Finance Review (GBFR), ISSN 2384-1648, People & Global Business Association (P&GBA), Seoul, Vol. 25, Iss. 4, pp. 73-90, <https://doi.org/10.17549/gbfr.2020.25.4.73>

This Version is available at:

<https://hdl.handle.net/10419/253314>

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# The Impact of Corporate Top Executives' Intellectual Capital on Organizational Effectiveness: Moderating Effects of Cultural Values and Business Performance

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## ABSTRACT

**Purpose:** This study explored the effects of corporate top executives' intellectual capital on organizational effectiveness and business performance and determined whether these effects vary from the factors included in Inglehart's cultural values.

**Design/methodology/approach:** A large group of corporate executives (n=900) were included in this study (450 each from China and the U.S.). Inglehart's cultural values were established as moderating variables. A path analysis using EQS6b was conducted to verify the hypothesis.

**Findings:** The findings indicate that the sub-elements of intellectual capital are strong drivers of a company's organizational effectiveness. The results showed that human, customer, and structural capitals affect organizational effectiveness positively. Compared with traditional versus secular-rational values and survival versus self-expression values, intellectual capital had significant effect on a company's organizational effectiveness and business performance.

**Research limitations/implications:** Scarce research has been conducted on intellectual capital. Even though intellectual capital is a key marketing concept that should not be ignored by today's companies and CEOs, very little empirical research has been conducted to test its theoretical framework.

**Originality/value:** The study showed that the cultural dimension is closely connected to the development of intellectual capital in companies or to firms' business performance. Companies that aim to compete or are already competing in overseas markets should consider adopting business strategies that incorporate cultural values into their intellectual capital.

*Keywords:* Cross-cultural study, Inglehart's cultural map, Intellectual capital, Organizational effectiveness

## 1. Introduction

Our modern society is described as a knowledge society because knowledge has become a source of

individual, business, radical innovation-related, global, and national competitiveness. In a knowledge-based economy, there is an increased emphasis on the importance of intellectual capital (IC), such as knowledge, information, intellectual property, and experience, which may create wealth and enhance an organization's competitiveness (Agostini & Nosella, 2017; Hussinki et al., 2017; Mehralian, Nazari, &

Received: Nov. 30, 2020; Revised: Dec. 24, 2020; Accepted: Dec. 28, 2020

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Ghasemzadeh, 2018; Ross, 2017). To respond to the rapid changes in the business environment, as they manage their resources and capabilities, to become more effective in innovation, many companies are rapidly expanding and managing their investments in intangible assets (Cabrilo & Dahms, 2018; Mehralian et al., 2018; Nadeem, Gan, & Nguyen, 2017). Previous literature has revealed human capital, structural capital, and customer capital as the major components of IC: these elements affect value creation and business performance (Agostini & Nosella, 2017; Bontis, 1998; Cabrilo & Dahms, 2018; Hussinki et al., 2017; Kamukama, 2013; Mehralian, et al., 2018; Nadeem, Gan, & Nguyen, 2017). IC can be a decisive resource in determining a firm's success or failure because IC's value is derived from its application to the use of other forms of capital (Cabrilo & Dahms, 2018; Hussinki, et al., 2017; Kamukama, 2013; Mehralian, et al., 2018). A company can leverage IC to achieve a competitive advantage by using the full range of its IC resources effectively (Cabrilo & Dahms, 2018; Mehralian, et al., 2018; Nadeem, Gan, & Nguyen, 2017). IC represents a lasting competitive advantage and a source of superior performance to the firm (Dang, Le-Hoai, & Kim, 2018; Kamukama, 2013).

Despite IC being a key driver of innovation and the development of a competitive edge and is linked with organizational effectiveness and business performance, many companies do not clearly understand the role it plays in their markets or what needs to be done to develop and apply it. Therefore, this study explored the relationship between the IC built by corporate top executives, such as CEOs, CFOs, section chiefs, and department heads, and organizational effectiveness.

Many research studies on cross-cultural values have suggested that the relationship between a manager's personal traits, such as those related to IC, and a company's outcomes is likely common across national settings. Thus, the present study aims to examine the effects of corporate top executive's IC on organizational effectiveness and business performance and to determine whether these effects vary

with factors included in Inglehart's cultural values (1990). This study was designed to determine whether Inglehart's two major cultural values play a moderating role in the influence of a corporate top executive's IC on a company's organizational effectiveness and business performance. This contributes to the enhanced effectiveness of the company's management or management strategies, because cultural values continue to exist and greatly influence individual and organizational behaviors (Arkes, et al., 2010; Jin, 2015; 17; Kemper, Engelen, & Brettel, 2011).

## II. Literature Review and Research Hypotheses

### A. Intellectual Capital (Human, Customer, and Structural capital)

In the introduction, we presented examples of IC and one attempt to define it, but the literature on IC offers many definitions (Nahapiet & Ghoshal, 1998). We begin this section by reviewing several such definitions. IC is defined as a set of intangible assets that can increase an organization's value as well as competencies inside and outside an organization (Agostini and Nosella, 2017; Cabrilo & Dahms, 2018; Eva & Milena, 2015; Hussinki et al., 2017; Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018; Nadeem, Gan, & Nguyen, 2017). Knowledge or intellectualization capabilities are sources of human experiences, specialized skills, an organization's technologies, customer relationships (Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018; Nadeem, Gan, & Nguyen, 2017), and a competitive edge (Nahapiet and Ghoshal, 1998). Brennan and Connell (2000) explained the difference between a company's market value and its book value by a reference to the role of intellectual capital, which enhances market value, and defined intellectual capital as a company's knowledge-based equity. A previous study argued that intellectual property includes a company's products, brands, franchises,

information systems, management procedures, patent rights, trademark rights, and work process efficiencies in addition to the employees' knowledge and technologies and the customers' trust. In spite of variations in the definition of IC in the literature, however, all definitions have in common the proposition that IC includes the concept of the value of intangible knowledge (Najmi, et al., 2018).

An enormous body of research has classified the major subfactors of IC as human capital, structural capital, and customer capital: these elements affect value creation and business performance (Agostini & Nosella, 2017; Bontis, Keow, & Richardson, 2000; Cabrilo & Dahms, 2018; Hussinki et al., 2017; Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018; Nadeem, Gan, & Nguyen, 2017)

Human capital is a combination of a person's genetic traits, educational level, knowledge, skills, abilities, motivations, tasks, and experiences and attitudes toward life and business. Human capital encompasses all the capabilities and skills of workers in an organization, and customer capital is an organization's potential intangible assets obtained by its relationships with external organizations (Cabrilo & Dahms, 2018; Hussinki, et al., 2017). Human capital plays a central role in creating a firm's value; it includes personal characteristics, such as task-related skills and capabilities, tacit knowledge, and willingness to learn. Based on the prior studies examined thus far, this study regards human capital as a set of skills and capabilities that are related to the organizational members' tasks.

Structural capital comprises knowledge involving nonhuman elements that provide value to an organization and that are stored in media, such as databases, organizational charts, process manuals, strategies, and customs. Structural capital is traditionally a very wide-ranging concept that may include the following: ordinary task procedures formed through certain types of intellectual activities related to the tasks organization members must carry out (Bontis, Keow, & Richardson, 2000; Cabrilo & Dahms, 2018; Hussinki, et al., 2017; Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018); organizational culture; information systems; organizational structure; intellectual property (Saint-Onge,

1998); processes that develop innovational new products and services (Mavrinac & Siesfeld, 1997); and all things that remain in an organization after employees leave work (Edvinsson & Malone, 1997).

Structural capital, which is a sub-element of a firm's intellectual capital, increases the firms' value. Structural capital develops through human capital or human resources, and its elements are business culture, processes, information technology, strategies, organizational learning, effectiveness/efficiency, atmosphere, and system/procedures. Therefore, this study defines structural capital as organizational capabilities developed, obtained, and implemented along an organizational dimension and as intangible knowledge assets accumulated by an organization.

Customer capital is an organization's relationship with actors outside the organization and what is most central here is the relationship with major customers (Bontis, 2001). Some scholars reported that the external structure was composed of relationships with customers and suppliers, brand names, and trademark rights, and noted that the external structure was fluid and was also able to be legally owned by a company (Agostini & Nosella, 2017; Bontis, Keow, & Richardson, 2000; Cabrilo & Dahms, 2018; Edvinsson & Malone, 1997; Hussinki, et al., 2017; Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018; Nadeem, Gan, & Nguyen, 2017). Therefore, in this study, customer capital is defined as the sum of the value obtained in the relationship between the marketing routes and customers. This study analyzes intellectual capital as a combination of human, structural, and customer capital.

## B. Organizational Effectiveness

Organizational effectiveness is a concept that indicates the success level of an organization in using a multidimensional approach and is essential to superior performance (Dang, Le-Hoai, & Kim, 2018; Upadhaya, Munir, & Blount, 2014). When organizational effectiveness is studied as the central theme of organizational theory, researchers constantly try to

set the criteria for evaluating organizational achievements or results and to find common ground between theories. Organizational effectiveness is an organizational capability that can meet the competing needs of many stakeholder groups (Hodge & Anthony, 1984). To evaluate organizational effectiveness, it is necessary to consider goal orientation, the appropriateness of communication, innovation, autonomy, adequate distribution of rights, adaptation, and the problem-solving structure (Amah & Ahiauzu, 2013; Milles, 1980). There are two different approaches to measure organizational effectiveness: the traditional and the contemporary approach (Amah & Ahiauzu, 2013). The traditional approach includes the goal approach, the system resource approach and the internal process approach, while the contemporary approach includes market share, productivity and profitability.

Organizational effectiveness has been evaluated on the basis of both economic and psychological performance factors; however, psychological performance factors have been studied more extensively. Psychological performance factors include the organization members' morale, organizational commitment, job satisfaction, adaptation to the organization, and motivation (Cuadra-Peralta, et al., 2017). Some scholars have argued that organizational effectiveness would be better treated as a construct. The construct of effectiveness is not a real property of any organization but rather a label, which people use with varying degrees of agreement (Taylor, Cornelius, & Colvin, 2014). Although many indicators are considered in the evaluation of organizational effectiveness, the effective label has been applied both to people and organizations. The studies of organizational effectiveness have focused on job satisfaction, organizational commitment, and adaptation to the organization.

### C. Inglehart's Perspective on Cultural Value for Cross-Cultural Study

Culture is a construct that is difficult to define. Kluckhohn (1954) defined culture as consisting of "patterned ways of thinking, feeling and reacting,

acquired and transmitted mainly by symbols, constituting the distinctive achievements of human groups." Triandis introduced the concept of "subjective culture", or a "characteristic way of perceiving [the] social environment" (Triandis, 1972, p.3) common to a culture. Hofstede (1991) described culture as the collective programming of the mind that distinguishes the members of one group of people from those of another. Hall (1983) and Hofstede (1991) noted that culture includes all things that are socially learned and commonly possessed by members of a social group. Culture values, which in turn affect our attitudes and behavior. Culture and values are associated with the national culture of a country as boundaries that allow interaction and socialization within them (Reiche, Lee, & Quintanilla, 2009). Many scholars have studied the effect of national cultural values, attitudes and behaviors on business and management styles (Hofstede, 1991; Trompenaars & Hampden-Turner, 1997).

Although the work of Hofstede (2001) is more widely used in international business studies, Hofstede's research does not include any actual data on practices other than limited general background data (Maseland & Hoorn, 2009). Some scholars criticize Hofstede's country scores for being based on data collected more than three decades ago and limited to a single multinational company, namely, IBM (McSweeney, 2002; Sivakumar & Nakata, 2001). This study therefore attempts to use the framework of national cultural values to capture differences between national cultures with a focus on the two major dimensions of traditional values versus secular-rational values and survival values versus self-expression values (Inglehart & Baker, 2000; Inglehart & Norris, 2003). The study adopts the World Values Survey (WVS) coordinated by Ronald Inglehart (Inglehart, 1990); this survey is one of the most widely used values surveys. The World Values Survey (WVS) provides the richest source of data for the study, though it is perhaps not frequently used in international business research (Maseland & Hoorn, 2009). Two major dimensions of cross-cultural values were identified by Inglehart and his colleagues (Inglehart & Baker,

2000; Inglehart & Norris, 2003). Furthermore, Inglehart and Welzel (Inglehart & Welzel, 2005) analyzed the WVS data. The two major cultural values are summarized as follows.

Traditional values emphasize the importance of religion, parent-child ties, deference to authority and traditional family values. Societies with traditional value have high levels of national pride and a nationalistic outlook. Secular-rational values have the opposite preferences to the traditional values. Societies with secular-rational values place less emphasis on religion, traditional family values and authority. Divorce, abortion, euthanasia and suicide are seen as relatively acceptable.

Survival values place emphasis on economic and physical security. It is linked with a relatively ethnocentric outlook and low levels of trust and tolerance. Self-expression values give high priority to environmental protection; growing tolerance of foreigners, gays and lesbians and gender equality; and rising demands for participation in decision making in economic and political life (see [www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)).

According to the map, societies with weak secular-rational values and weak self-expression values pursue an ideal in which individuals are restrained because they are chained to survival communities. This type of society tends to emphasize human constraints. In contrast, societies with strong secular-rational values and strong self-expression values pursue an ideal in which individuals are free to express themselves because they are unchained from survival communities. This type of society tends to emphasize human choice (Welzel, 2006).

According to Inglehart's cultural scores for China and the U.S.A., the traditional values scores is 1.20 for China and -0.45 for the U.S. The survival values score is -0.46 for China, and the self-expression values score is 1.81 for the U.S. China is grouped with societies that have high scores on traditional and survival values, whereas the U.S is grouped with societies that have high scores on secular-rational and self-expression values. Traditional values are emphasized more in China than in the U.S.A., and

secular-rational values are emphasized more in the U.S.A than in China. Furthermore, survival values are emphasized more in China than in the U.S.A., and self-expression values are emphasized more in the U.S.A than in China. Societies with high scores on the self-expression values are more likely to establish a stable democracy than societies that emphasize the survival values. American's society places a stronger emphasis on self-expression and human choice than China.

Corporate culture is a mental asset created in an organization and its surroundings, and it is also the vision, the other side, values, or paradigm of the company's employees. Many global companies place a great deal of emphasis on corporate culture, which they are constantly cultivating (Deal & Kennedy, 1982). Corporate culture has been actively studied since the early 1980s, and studies have been conducted on organizations that take a cultural approach. The comparison of countries' corporate cultures has been an important study theme in academia and the business world. Hall, Hofstede, Kluckhohn, and Trompenaars explained differences in management practices according to corporate culture by comparing the cultures of various countries. Corporate culture can differentiate and enhance corporate images. If culture is properly shaped in a company, communication within the company becomes easier, job satisfaction is enhanced, and decision making is made easier by using common criteria (Schein, 1985).

In China, there have been many changes since the economic reform and open-door policy in 1978. Confucian tradition is viewed as playing a mediating role in carrying out the reform of China's market system. Chinese culture has a humanistic tradition, which means that heaven and humans are viewed in harmony. This culture helps to maintain morality and moderation and places importance on human relations. Traditional attitudes and nepotism support an approach to problem solving that is trusting of management and relies on more formal modes of communication and discussion. Based on the observations of cultural anthropologists, Chinese collectivism and its long-standing cultural orientation

are changing quickly. Power distance is high. Chinese culture is viewed as having high avoidance of uncertainty. In comparison, American culture generally represents individualism and democracy. American corporate culture is democratic, and the tendency for authoritarianism is low. American culture places emphasis on an individual's sense of accomplishment and abilities and is oriented more towards the long term. Such cultural qualities are commonly seen in companies and shape a distinct corporate culture. Cultural differences are considered to play a part in the effect of senior management's style or decision making on organizational performance.

#### D. Hypotheses

This study aims to verify how human capital, structural capital, and customer capital, elements of IC, practically affect a company's business performance. Bontis (1998, 2000) empirically analyzed this relationship with service and nonservice companies as subjects and found a positive effect of human capital on customer capital. Previous studies have observed that human capital has a significant influence on customer capital (Agostini & Nosella, 2017; Cabrilo & Dahms, 2018; Hussinki et al., 2017; Nadeem, Gan, and Nguyen, 2017; Wang, Wang, and Liang, 2014). Other research works empirically analyzed the relationship between human capital and structural capital: Edvinsson and Malone (1997) argued that individual capital changed into organizational capital and empirically found that human capital had a significant effect on structural capital. Bontis (1998, 2001) empirically studied the relationships involving intellectual capital and found that customer capital had a positive effect on structural capital. Many previous studies verified that customer capital significantly affected structural capital (Agostini & Nosella, 2017; Cabrilo & Dahms, 2018; Hussinki et al., 2017; Nadeem, Gan, and Nguyen, 2017; Wang, Wang, and Liang, 2014). Some scholars proved there was a significant relationship between the following: human capital and customer capital; human capital

and structural capital; structural capital and company outcome; and between customer capital and performance (Bontis, 1998; Nadeem, Gan, & Nguyen, 2017; Wang, Wang, & Liang, 2014).

For companies, IC is an important source of competitive advantage (Agostini & Nosella, 2017; Cabrilo & Dahms, 2018; Hussinki, et al., 2017; Nadeem, Gan, & Nguyen, 2017): the effective management of intellectual capital should enhance various outcomes (e.g., organizational effectiveness and management performance) in capital markets and should help management become more effective. The sub-indicators for intellectual capital (e.g., leadership, skills, motivation, experience, etc.) are critical for successfully implementing strategy, obtaining higher market share, enhancing innovativeness, and improving a company's core capabilities. Moreover, a prior study indicates that companies that survive in competitive markets manage intellectual capital more effectively than less competitive firms do (Mavrincac & Siesfield, 1997). In addition, Truls, Engström and Siren (2003) reported that the hotel companies' IC affected financial performance indicators, such as gross operating profits. In studies by Sherer (1995) and Pennings, Lee, and van Witteloostuijn (1998), human resources management was shown to affect performance. Other studies found a positive correlation between human capital and a company's performance (Agostini & Nosella, 2017; Cuadra-peralta, et al., 2017; Hussinki, et al., 2017; Nadeem, Gan, & Nguyen, 2017). Michalisin, Kline, and Smith (2000) empirically studied the effects of organizational culture, know-how, and fame on structural capital and performance. This study found positive relationships between elements of intellectual capital and performance.

Human capital that is embodied in employee expertise, knowledge, and capabilities can help to establish effective information systems and standard operating processes. Customer capital represented by customer satisfaction, sharing information about products and services with customers, and developing good relationships between an organization and its customers can help improve a company's corporate image and induce customer loyalty, which then

enhances corporate performance. Developing structural capital is important because it can improve the ability to innovate. Structural capital related to task processes, manuals, information systems, organizational culture, etc., can help a firm obtain appropriate information and make good decisions, thereby enhancing corporate outcomes, such as organizational effectiveness and business performance. The foregoing discussion suggests that for companies, the sub-elements of intellectual capital are directly related to various outcomes. A higher organizational effectiveness can positively affect business performance. Therefore, the following hypotheses were proposed:

- H1.** Human capital (H1-1), customer capital (H1-2), and structural capital (H1-3) have a positive impact on organizational effectiveness.
- H2.** Organizational effectiveness will have a positive impact on a company's business performance.

An examination of national culture reveals that there are forces at the national level that create a meaningful degree of commonality within a country (Steenkamp, 2001, p. 36). This view has been empirically validated by a series of studies (Kemper, Engelen, & Brettel, 2011; Schwartz and Ros, 1995). A number of studies on the impact of culture have been conducted on various areas of business practices, including management functions and business performance (Newman & Nollen, 1996), the perceived importance of job outcomes and job satisfaction (Kanungo & Wright, 1983), and consumer behavior (Briley et al., 2000). Kemper, Engelen, and Brettel (2011) argued that management-owned intellectual capital affects interactions between various parties in decision-making, the relations with external institutions, and building partnerships with other organizations. The effects of intellectual capital depend on the cultural characteristics of the employee and external stakeholder networks because culture is considered relatively homogeneous at the national level (Kemper, Engelen, & Brettel, 2011). In this study, as in a previous study (Lachman, Nedd, & Hinings, 1994), the effects of intellectual capital on management performance increase when there is a

match between the prevailing national cultural values and the elements of intellectual capital. Chui, Lloyd, and Kwok (2002) argued that national values play an important role in capital structure. National culture values influences attitudes and behavior and may therefore play a critical role in explaining differences between cultures. From the perspective of previous studies, we can say that culture generally influences behavior in any group of people. Therefore, there is a close match between the effects of intellectual capital and country scores when measured on the two major cultural values referenced earlier, leading to the following hypothesis:

- H3.** Cultural values (the traditional/secular-rational value and the survival/self-expression value) have moderating effects when intellectual capital positively affects organizational effectiveness.

## E. Research Model

The purpose of this study was to examine the relationship between corporate executive's intellectual capital and organizational effectiveness and business performance. In addition, the study was intended to examine whether national culture had a moderating effect when sub-elements of corporate executive intellectual capital affects organizational effectiveness and business performance. In addition, the study explores the mediated effect of organizational effectiveness on the relationship between IC and business performance. as shown in Figure 1.

## III. Methods

### A. Data Collection and Sampling

This study involved companies from variety of industries in and China and U.S. As for Chinese companies, those located in China's three major economic regions were selected with the help of Chinese businessmen. The subjects were businesses



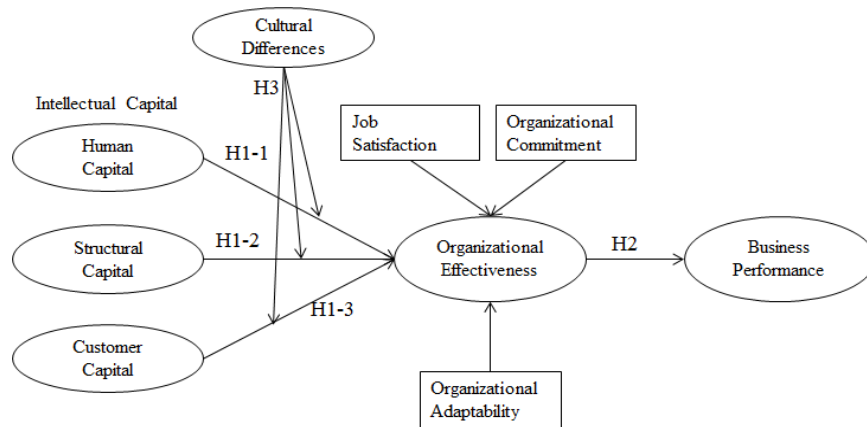


Figure 1. Suggested Research Model

which were conducting overseas business, including export. Classification of business types was made by referring to classifications used in prior studies (Zahra, et al., 2000). Companies in U.S were selected from members of the Small and Medium Business Association. Nine hundred companies registered with both countries' business associations were randomly selected as sample companies. Those whose addresses had changed and with whom contact was impossible were excluded due to the time difference of six months between the selection of sample companies and the researcher's survey. Two sets of 475 questionnaires were distributed to the Chinese and U.S. participants in their respective languages. After sufficient explanation and request for consideration, the questionnaires were filled in by the self-administered method before they were collected. This survey was conducted on corporate top executives from August 1 to December 30, 2019. The questionnaire was created in Chinese and translated into English for the U.S. participants. After excluding those with insincere responses, 900 questionnaires (450 each from China and the U.S) were used for empirical statistical analysis.

Before the questionnaire survey, a preliminary survey was conducted on 30 undergraduate students majoring in business administration. The researchers asked them about the difficulty of the questions, typographical errors, and their degree of comprehension of the questions. In addition, reliability and factor

analyses were conducted. A survey of both countries' business managers was conducted through the Internet (e-mail) and onsite visits. In order to collect the data, the online and onsite surveys were conducted together. For the online survey, the respondents' Internet protocol addresses were input, and for the mail survey, the questionnaires were selected via fax in order to remove overlapping responses.

## B. Operational Definitions of Major Variables

This study defined intellectual capital, based on prior studies, as a source of an organization's competitive edge and the set of intangible assets which may contribute to or increase the organization's value (Teece, 2000). This study disaggregated intellectual capital into human capital, customer capital, and structural capital (Agostini & Nosella, 2017; Bontis, 1998; Cabrilo & Dahms, 2018; Hussinki et al., 2017; Kamukama, 2013; Mehralian, Nazari, & Ghasemzadeh, 2018; Nadeem, Gan, & Nguyen, 2017). The study used measurement items whose reliability and validity had been proved in prior studies for each variable. In addition, some items were revised and applied after being made suitable for research involving relationship exchanges among the companies.

Four items for measuring human capital were selected from previous studies (Bontis, 1998; Youndt

& Snell, 2004; Agostini & Nosella, 2017; Nadeem, Gan, & Nguyen, 2017; Wang, Wang, & Liang, 2014): “The level of knowledge of our company’s employees is high”; “Capabilities related to tasks of our company’s employees are high”; “I think our company’s employees are experts in the relevant field”; “Our company’s employees have abundant task-related experiences.”

Three items for measuring customer capital were selected from previous studies (Bontis, 1998; Nadeem, Gan, & Nguyen, 2017; Wang, Wang, & Liang, 2014): “Customer satisfaction with our company’s products/services is high”; “Customer reliability of our company’s products and services is high”; and “Customers think highly of our company’s images.”

Three items for measuring structural capital were selected from previous studies (Bontis, 1998; Subramaniam & Youndt, 2005; Wang, Wang, & Liang, 2014): “Our company inputs a lot of knowledge within our company into database/manuals”; “Our company has many intellectual property rights and patents”; and “Our company’s task process has a unique method or structure our competitors may not imitate easily.”

A company’s organizational effectiveness is measured according to nine factors identified in previous studies (Deem, DeLotell, & Kelly, 2015; Nadeem, Gan, & Nguyen, 2017; Upadhaya, Munir, & Blount, 2014)). A company’s organizational effectiveness encompasses job satisfaction, organizational commitment, and organizational adaptability. Job satisfaction is defined as having a pleasant or positive emotional state in regard to one’s job, and job satisfaction factors include welfare, job achievement, wage system, and human relations (Nadeem, Gan, & Nguyen, 2017; Upadhaya, Munir, & Blount, 2014). Organizational adaptation indicates organization members’ perception of how flexible the organization is in adapting to internal and external environmental changes. It describes the ability to secure the organizational resources to change the organizational type and structure to address environmental perception and maintain long-term existence. Organizational commitment is the concept used to understand the psychological state of an organization’s members, and it concerns the relationship between employees and an organization. Organizational

commitment is connected to a personal sense of unity, obsession, attachment, loyalty, identification, and sense of belonging (Nadeem, Gan, & Nguyen, 2017; Upadhaya, Munir, & Blount, 2014).

A company’s business performance is defined as “the company’s sales, market share, and profit increase recognized by management”. Business performance was measured by three questions on financial and non-financial performance. In this study, was measured using market share, profitability, and sales to formulate questions on management performance (Zahra et al., 2000). Business performance measured with three items: “Our company’s sales increase is higher than our competitors’ for the past three years”; “Our company’s market share increase is higher than that of our competitors for the last three years”; and “Our company’s profitability is higher than our competitors’ for the last three years.”

All items were taken from previously validated measures in the literature (Bonfour & Edvinsson, 2005). Overlapping parts were excluded and the questionnaire was composed of four questions about human capital, three questions about customer capital, and three questions about structural capital. The variables in this study were measured with multi-item 5-point Likert-type scales (1=definitely disagree, 5=definitely agree).

Cultural values indexes, including two major values—traditional values vs. secular-rational values and survival values vs. self-expression values—were established as moderating variables. The study used Inglehart-Welzel cultural indexes (WWS, 2015) as measures of countries’ scores on the two major cultural dimensions as moderating variables (Inglehart & Baker, 2000; Inglehart & Weizel, 2005). Traditional values emphasize the following: “God is very important in respondent’s life”; “It is more important for a child to learn obedience and religious faith than independence and determination (autonomy index)”; “Abortion is never justifiable”; “Respondent has strong sense of national pride”; “Respondent favors more respect for authority.” Secular-rational values emphasize the opposite (Inglehart & Baker, 2000). Survival values emphasize the following:

“Respondent gives priority to economic and physical security over self-expression and quality-of-life (measured by the four-item materialist/post-materialist values index);” “Respondent describes self as not very happy”; “Respondent has not signed and would not sign a petition”; “Homosexuality is never justifiable”; “You have to be very careful about trusting people.” Self-expression values emphasize the opposite (Inglehart and Baker, 2000).

## IV. Results

### A. Descriptive statistics

A total of 900 subjects responded to this study’s questionnaire. Participants were classified by managerial

position. Thus, this study classified top manager group including from section chief, head of department as a middle manager group, board of directors and CEO. Table 1 described sex, position, firm age, size, and industrial category.

### B. Measurement Assessment, Validity and Reliability Tests

Scales were tested for dimensionality, reliability, and validity using exploratory factor analysis (EFA) and confirmatory factor analysis with EQS6b (CFA; Bentler, 2004) before assessing the hypothesized relationships. As shown in Table 2, after collecting and cleaning the data, we conducted verification tests to determine tests for the measurement model’s validity. The study first performed principal components

**Table 1.** Profile of sample

		China (n=450)	U.S (n=450)
Sex	Man	264(58.7%)	240(53.3%)
	Woman	186(41.3%)	210(46.7%)
Position	CEO (vice CEO)	25(5.6%)	69(25.3%)
	Directors	85(18.9%)	105(23.3%)
	Executive manager	56(12.4%)	72(16%)
	General manager	284(63.1%)	204(45.3%)
Firm Age	0-10	108(24%)	153(34%)
	10-19	133(29.6%)	150(33.3%)
	Over 20	209(46.4%)	147(32.7%)
Firm Size	< 10	34(7.6%)	110(24.4%)
	10-49	59(13.1%)	105(23.3%)
	Over 50	357(79.3%)	235(52.2%)
Industry	Electronics	46(10.2%)	47(10%)
	Machinery	38(8.4%)	42(9%)
	Petroleum	52(11.6%)	36(8%)
	Construction	67(14.9%)	27(6%)
	Medicine	34(7.6%)	38(8%)
	Distribution	72(16%)	63(14%)
	Information	37(8.2%)	46(10%)
	Clothes	36(8%)	36(8%)
	Wholesale	38(8.4%)	59(13%)
	Services	30(6.7%)	56(12%)

factor analysis with varimax rotation on the initial items, employing a factor weight of 0.50 as the minimum cutoff value. It then examined the underlying factor structure to determine whether any new dimension within each factor was conceptually meaningful and also to examine the psychometric properties of the scales. The result of a Bartlett's test of sphericity was found to be significant ( $\chi^2 = 15326.4$ (df = 1200),  $p < 0.0$ ), while the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.856. The data were therefore suitable for analysis. An exploratory factor analysis (EFA) of all of our scale items revealed three factors explaining 87.92% of the variance in our study's constructs, with the first factor explaining 80.97% and the last factor explaining 3.25% of the total variance for independent variables. An exploratory factor analysis (EFA) of all of our scale items revealed three factors explaining 82.24 % of the variance in our study's constructs, with the first factor explaining 77.59 % and the last factor explaining 4.65 % of the total variance for dependent variables. The

exploratory factor analysis of the 22 variables revealed 5 factors with eigenvalues greater than 1.00. This analysis suggested that the data sample used in the study was likely not contaminated by common method bias (Podsakoff, et al., 2003).

In order to verify the discriminant validity of the variables, correlation analysis using average variance extracted (AVE) was performed the data divided into China and U.S. As shown in Table 3, scale reliabilities were estimated using Cronbach's alpha, which exceeded the standard acceptance norm of .70 for all constructs. In order to test validity, EFA was first applied to summarize the factor structure using the maximum likelihood extraction method with varimax rotation. Factor loadings were examined at 0.5 and above on each potential construct, which also satisfies the requirement of construct validity. CFA was used to confirm construct validity. The average variance extracted (AVE) also satisfies the standard of 0.5, which means that the measurement indexes exhibited convergent validity.

**Table 2.** Result of Factor Analysis

Independent Variables			Dependent Variables		
Construct	Items	F.L	Construct	Items	F.L
Human Capital	HC1	.843	Organizational Effectiveness	OE1	.792
	HC2	.824		OE2	.683
	HC3	.813		OE3	.803
	HC4	.787		OE4	.742
Customer Capital	CC1	.803		OE5	.696
	CC2	.787		OE6	.721
	CC3	.776		OE7	.812
Structural Capital	SC1	.890		OE8	.775
	SC2	.878		OE9	.843
	SC3	.871	BP1	.889	
			BP2	.835	
			BP3	.813	
			Business Performance		
Independent Variables			Dependent Variables		
Factor	Eigenvalues	% of Variance	Factor	Eigenvalues	% of Variance
Factor 1	6.362	80.97	Factor 1	7.267	77.59
Factor 2	1.559	3.70	Factor 2	3.622	4.65
Factor 3	1.265	3.25			
87.92 % of total variance Extracted			82.24 % of total variance extracted		

Note: F.L: Factor Loadings

**Table 3.** AVE, Cronbach's alpha and squared correlations

	$\alpha$	A.V.E	1	2	3	4	5
H.C	0.886	0.723	1				
C.C	0.853	0.673	.243	1			
S.C	0.897	0.742	.252	.145	1		
O.E	0.891	0.693	.136	.166	.326	1	
B.P	0.937	0.724	.132	.018	.119	.124	1

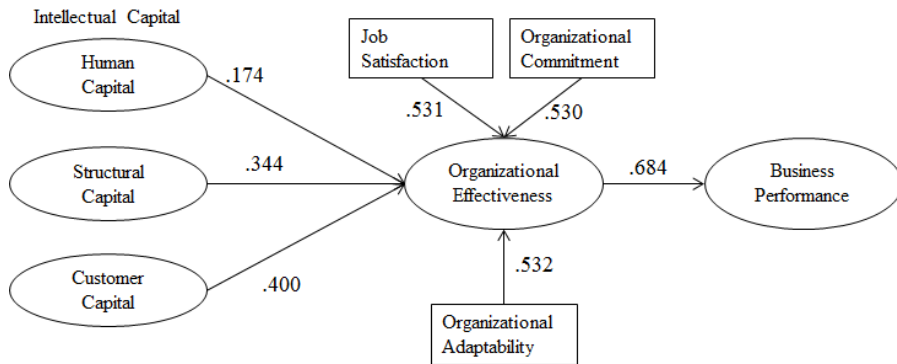
Notes: AVE: Average Variance Extracted, H.C: Human Capital, C.C: Customer Capital, S.C: Structural Capital, O.E: Organizational Effectiveness, B.P: Business Performance,

**Table 4.** Results of Path Analysis

H	Path	Std. Error	Standardized Coefficient (Un) <sup>#</sup>	
H1-1	HC -> OE	.033	.174***(.168)/z=5.097	Supported
H1-2	CC -> OE	.037	.344***(.319)/z=8.667	Supported
H1-3	SC -> OE	.035	.400***(.380)/z=10.907	Supported
H2	OE -> BP	.027	.684***(.764)/z=35.293	Supported

Goodness of Fit:  $\chi^2=28571.6$ ,  $df=231$ ,  $p=.000$ , CFI=.947, GFI=.889, AGFI=.870, NFI=.872, NNFI=.930, SRMR=.091, RMSEA=.048

\*\*\*p<.001, #Standardized (Unstandardized Coefficient), H.C: Human Capital, C.C: Customer Capital, S.C: Structural Capital, OE: Organizational Effectiveness, BP: Business Performance



**Figure 2.** Path analysis of total sample

### C. Hypotheses Testing

Table 4 and Figure 2 below shows the results of path analysis performed in order to verify the hypothesis that the sub-elements of corporate executive's intellectual capital positively influence organizational effectiveness and business performance. To test structural relationships, the hypothesized casual paths were estimated. Four hypotheses were supported. The

results are shown in Table 4 and Figure 2 and indicate that human capital as a sub-component of corporate executive's intellectual capital has positive effects on organizational effectiveness (path coefficients:  $\gamma = .174$ ,  $p < .001$ ). Customer Capital, as a sub-component of corporate executive's intellectual capital has positive effects on organizational effectiveness (path coefficients:  $\gamma = .344$ ,  $p < .001$ ). Structural Capital as a sub-component of corporate executive's intellectual capital has positive

**Table 5.** Test of Homogeneity of Variance

Items	Levene Statistic	df	F	Sig
H.C	14.100	1	191.520***	.000
C.C	21.497	1	180.783***	.000
S.C	51.806	1	219.447***	.000
OE	19.212	1	183.178***	.000
BP	36.835	1	191.282***	.000

Note. \*\*\*  $p < .001$ , H.C: Human Capital, C.C: Customer Capital, S.C: Structural Capital, OE: Organizational Effectiveness, BP: Business Performance

effects on organizational effectiveness (path coefficients:  $\gamma = .400$ ,  $p < .001$ ). The organizational effectiveness has positive effects on business performance (path coefficients:  $\gamma = .684$ ,  $p < .001$ ). Thus H1-1, H1-2, H1-3, and H2 were supported. Human capital, customer capital, and structural capital were found to affect organizational effectiveness positively. The organizational effectiveness was found to affect business performance. The result confirmed that intellectual capital is critical factor to develop organization effectiveness.

Additionally, relationships between the sub-elements of human capital were analyzed. As found in prior studies, these factors influenced one another. Human capital affected structural capital and customer capital ( $\beta = .816$ ,  $p < .001$ ,  $\beta = .421$ ,  $p < .001$ ). Structural capital also affected customer capital ( $\beta = .462$ ,  $p < .001$ ). The size of a company, its age, and its target markets established as control variables were differentiated in order to examine the relationship between corporate executive's intellectual capital and business performance. Company age, which was established as a control variable, had a positive effect on business performance ( $\beta = .150$ ,  $p < .001$ ) but its size, types of industry, and target markets had no significant influential relationship with business performance ( $\beta = .014$ ,  $\beta = -.037$ ,  $\beta = -.006$ , and  $p > .05$ ).

#### D. Comparisons with two different countries' intellectual capital model

The study conducted the homogeneity variance test before performing a multigroup CFA analysis. The results are described in Table 5. The test indicated

that the sample did not have a homogeneity problem. A p value less than .05 indicates a violation of the assumption. A violation did not occur in this study.

As shown in Table 6 and Figure 3, the hypothesized model was estimated separately for each of the two groups, intellectual capital in China and in U.S respectively. H3 explores the cultural values (the traditional/secular-rational value and the survival/self-expression value) have moderating effects when the intellectual capital positively affects organizational effectiveness.

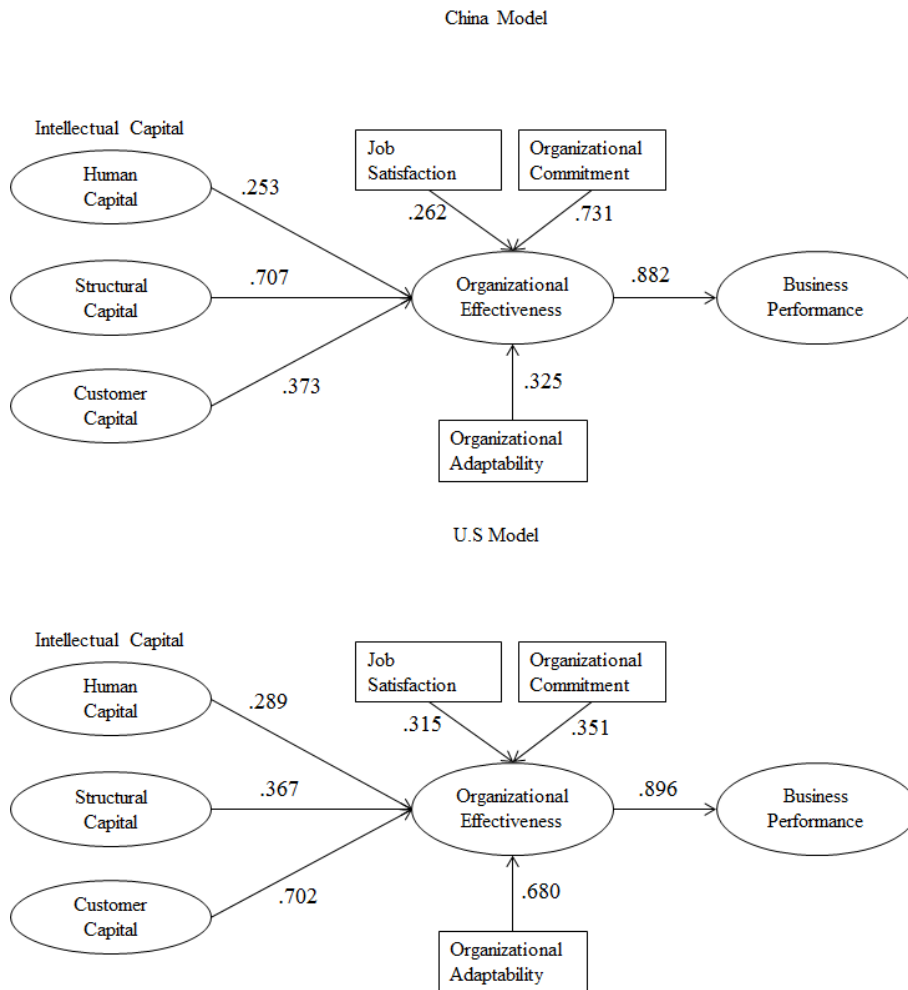
Regarding H3, the values generated by the suggested conceptual model for intellectual capital from the two countries differ with respect to organizational effectiveness. Multi-group CFA analysis with covariance structural analysis was conducted using EQS6b (Bentler, 2004). The objective of multi-group simultaneous path analysis was to determine whether the path coefficients for the relationships between intellectual capital and organizational effectiveness in two countries with different culture, were equal across the two groups. The tests show that interaction between human capital, customer capital, structural capital and organizational effectiveness ( $\chi^2_{diff} = 4.705$ ,  $p < 0.001$  for human capital,  $\chi^2_{diff} = 5.204$ ,  $p < 0.05$  for customer capital, and  $\chi^2_{diff} = 16.09$ ,  $p < 0.001$  for structural capital) were significant, but in every case the direction of interaction was completely opposite to the predicted effect, so H3-1, 3-2, and H3-3 were supported.

Results for other variables show that interaction between organizational effectiveness and business performance ( $\chi^2_{diff} = 25.82$ ,  $p < 0.001$ ) was significant, but the direction of interaction was completely

**Table 6.** Comparison for both countries' model

Path	Path coefficients from separate sample analyses		Difference of path coefficients	Modification Index $\chi^2$
	China	U.S		
H.C -> O.E	0.253***	0.289***	0.036	4.705***
C.C -> O.E	0.707***	0.367***	0.340	5.204**
S.C -> O.E	0.373***	0.702***	0.329	16.09***
O.E -> B.P	0.882***	0.896***	0.014	25.82***
China Sample	Goodness of Fit: $\chi^2=4216.1$ , $df=231$ , $p=.000$ , CFI=.934, GFI=.882, AGFI=.870, NFI=.873, NNFI=.914, SRMR=.092, RMSEA=.051			
U.S Sample	Goodness of Fit: $\chi^2=4377.4$ , $df=231$ , $p=.000$ , CFI=.926, GFI=.879, AGFI=.864, NFI=.868, NNFI=.912, SRMR=.098, RMSEA=.053			

Note. <sup>a</sup>Standardized, and \*\*\*  $p<.001$ , \*\*  $p<.05$ , H.C: Human Capital, C.C: Customer Capital, S.C: Structural Capital, O.E: Organizational Effectiveness, B.P: Business Performance



**Figure 3.** Comparisons of samples of two countries

opposite to the predicted effect, so H4 was supported. It was hypothesized that the effects of human capital and structural capital would be stronger for organizational effectiveness in than U.S. than China whereas the effects of customer capital would be stronger for young start-up entrepreneurs in than China than U.S. Also, the effects of organizational effectiveness would be stronger for business performance in than U.S. than China.

As discussed, cultural, traditional and survival values are emphasized in China, while secular-rational and self-expression values are emphasized in the U.S.A. Human and structural capital have a more positive influence on organization effectiveness in the U.S.A than in China. Customer capital is a more powerful factor in China than in the U.S.A. American's society places a stronger emphasis on self-expression and human choice than China does. These cultural values might have a positive influence on an organization's employees. The Chinese culture has a humanistic tradition that includes an emphasis on harmony and human relations. Employees in China are more likely to have traditional values, which indicates a harmonious view of the relationship between the corporation and customer.

## V. Discussion

### A. Theoretical Implications

The results of this study have several theoretical and practical implications. In terms of theoretical implications, most previous studies of intellectual capital have developed measurement indexes and a model. The empirical research on organizational effectiveness and business performance has been insufficient, and integrated research on the relationship between intellectual capital and organizational effectiveness and business performance is lacking. This study relied on prior studies and classified intellectual capital into human capital, structural capital, and customer capital: variables for measuring

these factors were developed and the finding that market orientation and entrepreneurial orientation are significant factors in assessing human capital, structural capital, and customer capital was empirically reached.

The results indicate that the effects of human capital and structural capital tend to be more important in a national culture with low scores on traditional values and high secular-rational values, such as the U.S. This means that human capital and structural capital, as elements of intellectual capital, are more important in societies (e.g., the U.S) with low scores on traditional vs. high scores on secular-rational values than in societies (e.g., China) with high scores on the former and low scores on the latter. In addition, human capital and structural capital, as elements of intellectual capital, are more important in societies (e.g., the U.S) with high scores on self-expression and low scores on survival values than in societies (e.g., China) with low scores on the former and high scores on the latter.

Furthermore, customer capital tends to be more important in a national culture with high scores on traditional and low scores on secular-rational values. This means that the customer capital element of intellectual capital is more important in societies (e.g., China) with high scores on traditional and low scores on secular-rational values than in societies (e.g., the U.S) with low scores on the former and high scores on the latter. In addition, the customer capital element of intellectual capital appears to be more important in societies (e.g., China) with low scores on self-expression and high scores on survival values than in societies (e.g., the U.S) with high scores on the former and low scores on the latter.

### B. Managerial Implications

The practical implications of this study based on the results of empirical analysis are as follows. First, in a situation where companies from various industries striving for technological survival are intensively pressured to develop competitive businesses and enhance their competitiveness, this study confirmed



that accumulating and utilizing knowledge and other capabilities efficiently is necessary to overcome disadvantages in resources, organization, and marketing and business strategies. In addition, the study showed that a cultural dimension is closely connected to the development of intellectual capital or to a company's business performance. Companies that aim to compete or are already competing in overseas markets should consider adopting business strategies that utilize cultural values and incorporate intellectual capital.

This study discusses managerial implications. IC was shown to directly affect a company's organizational effectiveness and business performance. This is consistent with the results of previous studies that assessed the relationship between intellectual capital and organizational effectiveness and business performance using subjective perceptions. The results from the present study are therefore meaningful insofar as they provide strategic insight into the utilization of corporate executive's intellectual capital. Based on the results of the study, companies should nurture and educate their employees using professional human resources so that these employees, who are the source of corporate executive's intellectual capital, may acquire and use high-quality knowledge. At the same time, business performance should be enhanced by efficiently utilizing business resources for linkages with an organization's systems, allowing for more efficient use of a company's resources and management of customer relationships. To develop human resources more effectively, companies should seek out diverse support measures aimed at improving employees' capabilities. One of the best ways to develop business performance and organization effectiveness is to base the development on the employer's knowledge. When intellectual capital is in the management focus, companies should foster an atmosphere in which their employees can develop their capabilities and create innovation. Organizational effectiveness and business performance can be well archived to be utilized when the accumulated knowledge needs to be leveraged to maintain competitiveness.

### C. Limitations and Future Studies

The major limitation of this study is that it does not include many countries. Follow-up studies should expand the scope to more cultures and countries. Many enterprises still rely on externality for the financial and accounting aspects of business performance, and therefore, accurate financial information reflecting some forms of capital (e.g., intellectual capital) is difficult to find. Future studies should present more accurate financial information to analyze and compare business performances. This study explored the effectiveness of cultural values by setting them as moderating variables and organizational effectiveness as the mediating variable. In future research, the effect of mediating variables on the relationship between independent and dependent variables should be discussed.

This study used Inglehart's cultural map as the framework of national cultural dimensions to detect the differences between two national cultures and focused on two major sets of values—traditional values versus secular-rational values and survival values versus self-expression values. There are several frameworks of national cultural dimensions, including Hofstede's model, Hall's model, Trompenaars and Hampden-Turner's model, and Spencer-Oatey's model. It may also be meaningful for those engaged in similar topics to apply a variety of cultural value models.

### Acknowledgment

This research has been supported by Kyonggi University Research Grant 2020-020.

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