Spatial Effect on Taiwanese Firms FDI Performance

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ABSTRACT
Taiwanese businesses exhibit a specific pattern when they enter into an uncertain territory, and tend to start off with a small amount of investments and explore markets by improvising strategies and tactics. This paper integrates theories concerning transaction costs and systems, and develops antecedent causes, and intervening and interference factors, by referring to the perspectives of economic geography. It is found that when faced with high uncertainties in emerging markets, multi-national corporations are highly concerned about institutional environments. Labor cost of different regions is an implicit indicator of the average wages that local companies are willing to pay. Companies that are willing to pay a high labor cost are less likely to face labor shortage, thus ensuring normal operation and better performance.

Keywords: Labor cost; Human capital; Multi-level research; Spatial analysis
1. Introduction

Since China embarked on a series of reforms and open-door policies in the 1990s, a large number of foreign businesses entered into the Chinese market. For Taiwanese businesses, the low labor cost in China is the key factor in cost reduction. In addition, the growing emerging markets in Asia, as well as the continuous development of the domestic market in China, has made China one of the most popular destinations for foreign direct investments. The eclectic paradigm is a theory in economics and is also known as the OLI-Model or OLI-Framework.

Dunning (1998) added three more factors to the theory: (1) Ownership advantages, (2) Location advantages, and (3) Internalization advantages. The discussion on how local labor costs in China assist effective operations of multinational corporations (MNCs) has hence become a key issue for academia and practitioners.

Most studies on the convergence of regional economies tend to ignore spatial factors and treat regions as isolated islands. This approach eliminates the possibility of interactions between regions (Mankiw, 1995; Quah, 1996). Highly-recognized studies, such as Baumol (1986), Barro and Sala-i-Martin (1995) and Mankiw, Romer, and Weil (1992), all overlook spatial factors. As a result, it becomes impossible to gauge whether spatial effects have material impact in the processes of regional economic growth. Hence, Rey and Montouri (1999) questioned the robustness of the empirical findings of those studies. In fact, it is necessary to incorporate geographic factors. Buckley and Ghauri (2004) suggested that international
business (IB) is definitely a major issue concerning the effects of multinational enterprise (MNE) in the global economy, due to the results of strategic shifts. Spatial transaction costs and knowledge assets play a pivotal role in the process (Mudambi, 2008).

In order to bridge this gap in literature, this research has three purposes: (1) to investigate the effect of HCRR in the spatial cluster and entry mode on the performance of joint ventures; (2) based on the Local Institutional Theory, to discuss what role infrastructure and labor costs have in organizational performance; (3) as China has a relatively closed environment and political instability; therefore, what is the effect of Organizational Slack when Taiwanese business enter the mainland Chinese market? To make up for deficiencies of the research tools of previous studies, this study especially considers the cross-level effect, and attempts to discuss the difference between this study and the international enterprise theory, as seen from the point view of spatio-graphy, and develops a detailed framework for Taiwanese businesses to invest the mainland Chinese market.

2. Literature review and Hypothesis development

Beugelsdijk, McCann, and Mudambi (2010) suggested that the major three schools focus on the issues surrounding companies and countries. In fact, traditional IB approaches do not delve into spatial issues associated with geographic locations. Hence, this paper concludes the following on the country level: 1) International trade theories: These theories consider
companies as the synonym of market structures and to a large extent ignore many important organizational and spatial features and differences related to MNEs. 2) Economic geography and location study: One of the obvious shortcomings of traditional economic geography and location studies is ignorance in the complex multi-plant productions of different countries and spatial behavior of MNEs. Few discussions or analyses venture behind the description of key theories (McCann & Mudambi, 2004, 2005).

2.1.1 Human Capital Relative Risk (HCRR) concept

De Long (1988) considered that human capital is the most importance influential factor in regional analysis, thus, most regional convergence research incorporates variable human capital. Barro (1991) added the variable of human capital (enrollment rate as a proxy) to the data from 98 countries from 1960 to 1985, and significant negative correlation exists between the level of the primary areas and the economic growth rate. Mankiw et al. (1992) followed the prediction of the neoclassic growth theory after controlling the human capital, the investment ratio, and population growth.

The empirical studies by Simon and Nardinelli (1996, 2002) indicated that human capital has significantly positive long-term contribution to regional economic growth, and found that the growth impetus of UK urban cities between 1861 and 1961 was not from natural resources or large sized manufacturing, but benefited from new knowledge gained by discussions between employees as high human capital; cities and metropolitan districts with more human capital in
the early 20th century have higher economic growth rate in the following century; in addition, employees graduated from universities have higher positive influence on employees graduated from high schools (Simon, 1998; Simon & Nardinelli, 1996, 2002).

2.1.2 Relationship of infrastructure, labor cost, HCRR and organizational performance

Markusen (1995) showed that multinational companies (MNCs) preferred to FDI than export when the tariffs or transportation costs of large foreign markets are higher. This study suggests this implies that costs are relatively lower when the size of the market is larger.

MNCs may have the cluster effect, which may form hotspots. From the perspective of economic geography, the driver of globalization is both technologies and system mechanism arrangements, which result in free mobility of funds, finances and freight services, but does not fall into the technological determinism trap (Castells, 1996; Harvey, 1989). Rivoli and Salorio (1996) further indicated that FDI is inevitable if manufacturers have high-level special locations—internalized advantages of transactions. However, investments are affected by uncertainty, investment delay, and withdrawal. As investment is not necessarily completed the first time, we can select and wait for more suitable investment times. Chen (1996) and Balasubramanyam, Salisu, and Sapsford (1996) indicated that local economic development may be impaired if the education, infrastructure, and other preconditions of the host country are not adequate. Larger markets have higher profits and economies of scale in production. In addition, the fixed costs of investing in a foreign country mean adapting to environmental
factors, such as: laws, culture, and language, and such costs and sales offset each other.

The cluster effect may increase FDI, as well as the immigration work force in the middle and western villages, thus, the expansion of regional difference in China is closely related to its industrial clusters. Jenkins and Tallman (2010) indicated geographical proximity, and implied assumptions of knowledge flow between remote clusters. Therefore, it is inferred that this region or city cluster may come from social capital.

Hypothesis 1a: HCRR intermediates relation between Infrastructure and Organizational Performance

Hypothesis 1b: HCRR intermediates relation between Labor Cost and Organizational Performance

2.1.3 Relationship of infrastructure, labor cost, entry mode and organizational performance

There are many previous studies on the entry mode. The empirical study by Chowdhury (1992) showed sole proprietorships have a higher percentage of export sales and better business performance than joint ventures. However, for the market exit rate, joint ventures have better performance than sole proprietorships. Wilson (1980) and Shaver (1998) suggested that the survival rate of sole proprietorships is higher than mergers and acquisitions (M&A) in selecting entry mode. Woodcock, Beamish, and Makino (1994), and Nitsch, Beamish, and Makino (1996), used three entry modes: sole proprietorships, joint ventures, and M&A to discuss the investment of Japanese manufacturers in the US and Western Europe, and found that sole proprietorship has the best performance, while M&A has the worst performance. Anderson and Gatignon (1986) discussed entry mode and business performance
using an entry model with high, medium, and low degrees of control.

Regarding the material level, manufacturers can form front and back industrial correlation through intermediate goods; regarding the non-material level, as knowledge is public, shared, and non-excludable, when manufacturers create new knowledge, they cannot retain the new knowledge within itself. Meaning knowledge will spill out, and other manufacturers can benefit (Capello, 1994), thus, spillover effects are generated. From the above, frequent liaison necessarily exists between manufacturers. As manufacturers are not always in the same geological space, regional interdependence exists, and manufacturers rely heavily on supporting facilities, such as roads, airports, and telecommunications to maintain trade with suppliers and customers. These business activities interact with each other. The transport infrastructure can be regarded as a proxy of their business infrastructure. In economic development, common comparisons are made between the public expenditures of highways and the expenditures of other infrastructure (Fisher, 1997). A well-developed transportation infrastructure allows businesses to adopt economic and efficient production and marketing strategies. Therefore, this paper proposes the hypothesis as follows:

Hypothesis 2: Entry Mode intermediate relation between Infrastructure and Organizational Performance

2.1.4 Relationship of HCRR, Organizational Slack and Organizational Performance

The Resource-Based View (RBV) emphasizes resource heterogeneity. However, Foss and Foss (2005) observed that empirical papers prefer to use the production function to establish
relationships between enterprise resources and performance, and adopt an input base to
measure resource reserves. Thus, the greater the input amount, the higher the book value,
meaning resource reserves are high. Due to continuous accumulation of resources, misbalance
occurs between enterprise resources and activities, and in such misbalance, organizational
slack resources (surplus resources) can emerge at the right moment. As slack resources exist
in an incomplete market, organizations must continue to pursue growth in order to develop
economic efficiency of resources. Therefore, growth decision making of an enterprise
depends on its owned resources (Mishina, Pollock, & Porac, 2004; Rugman & Verbeke,
2002).

Therefore, this “field domain” research collects detailed empirical evidence in order to
recognize the regional change process, the nature of spatial differences, and the causes and
results. Regarding economic geography, the institutional turn can be further extended to the
institutional research method of explaining different local economic life. The institution, as
the intermediate of shaping different local economy development tracks and products, can be
understood as a method to produce and exhibit spatial differences in economic development.
From another point of view, geographical dimension may become an important factor for
explaining institutional change. Therefore, this paper proposes the hypothesis as follows:

Hypothesis 3 : HCRR interferes relation between Organizational Slack and Organizational
Performance
3. Methodology

This study sampled the outward investments of Taiwan to China. Data suggest a total of 3752 investments from listed companies in Taiwan. The entries with unspecified addresses and outliers (before 1979) are eliminated. According to the data of the Ministry of Transportation & Communications and the Ministry of Finance, there are a total of 35,823 outward investments from individuals and small and medium enterprises (SMEs) from Taiwan to China in 2000–2009. In this study, a total of 18,067 entries are selected after the removal of those with missing values. According to Filatotchev, Strange, Piesse, and Lien (2007), Taiwanese businesses refer to the data of the prior year for their strategic selections of investments in China. When manufacturers evaluate investment proposals, they visit the destination sites in advance for due diligence. Therefore, this paper refers to the assumption of Filatotchev et al. (2007) and samples the regional data in 1999–2008 of municipalities and prefectoral-level cities in China. Based on the literature of the last section, the development research framework is shown in the following Fig. 1.
3.1. Spatial level variable

This study used SaTScan software (SSS) to measure clusters and relative risks. SSS is defined and developed by Kulldorff and Nagarwalla (1995) to scan and measure spatial and time statistics. Its applications include: (1) locality monitoring to detect whether there is significant clustering in time or space; (2) verification of whether specific distributions in time, space, or both are random; (3) evaluation of whether clusters are statistically significant; (4) regular monitoring to identify clusters as early as possible.

The height of purely spatial scan statistics reflects potential clustering over a period of time.

In every possible time and space, it is necessary to examine the possible geographic location and size. In fact, regions of varying sizes and shapes can be obtained to cover possible clustering throughout the entire research area. The same method can be applied to other variables such as gender, race, or education, as well as adjusted variables on the regional level.
Many studies refer to education as a variable to measure human capital. Hence, this paper uses investments in education in municipalities and prefectural-level cities as the proxy variable to measure whether HCRR (Human Capital Relative Risk) in a given city exhibits spillover, and examine how such spillover influence FDIs from Taiwanese businesses. This paper defines RR as the risk of over investment in education in a city. Fig. 2 shows that relative risks in the region tend to cluster into a common RR. This spatial heterogeneity causes co-movement effects among neighboring cities (Fig. 3).

Figure 2. RR Cluster
The majority of operation premises set up by Taiwanese businesses are in the proximity of highways. Taylor (2004) argued that most cities are between ordinary cities and world cities, and thus, they are in different competitive positions. Other scholars have mentioned that the rapid decline of transportation and communication costs has resulted in an unprecedented imbalance between the regions and cities in the developing world. Meanwhile, the gap continues to widen between regions in the industrialized world. The mobility of capital and labor, contrary to conventional wisdom, contributes to the concentration of productions rather than an even distribution of activities (Sunley, 2003). Therefore, this paper refers to the adjusted overall indicator of the infrastructure as a proxy operational variable.

During the past decade, major cities in China have witnessed a shortage of labour. Cheng and Kwan (2000) suggested that labor costs are the most important consideration for outward
investments by MNEs. Labor costs are mostly measured with average wages (Coughlin, Terza, & Arromdee, 1991; Sun, Tong, & Yu, 2002; Lansbury, Pain, & Smidkova, 1996a, 1996b). In the spatial context, high wages in a city mean relative better access to a high-quality labor force. Therefore, this paper uses the average monetary wages in a city in China as the proxy variable. Average monetary wages refer to the average monetary compensations that an employee receives in companies, enterprises, or government agencies. They represent the level of labor incomes during a certain period.

3.2. Firms level measure

Voss, Sirdeshmukh, and Voss (2008) argued that physical resources and human resources are the operational resources of companies. Any excess of operational resources indicate excess capacity. To enhance resource utilization efficiency, managers actively seek growth. Meanwhile, if excess capacities emerge due to market saturation, demand declines, competitive pressure increases, and product lines become stale. Hence, companies must expand product portfolios and market shares, or diversify operations, in order to enhance the probability of survival (Seth, Song, & Pettit, 2002). The more excess capacity in the form of tangible resources, the higher the pressure to pursue growth. Therefore, this paper refers to the internal capital of Taiwanese businesses, i.e., an organizational slack for investment projects, as a proxy variable. Finally, this paper uses book values at the end of investment as the performance measurement. The stake percentage of Chinese subsidiaries held by parent
companies is the proxy model for the entry model.

Table 1. Principle component analysis result

<table>
<thead>
<tr>
<th>Proxy</th>
<th>Communalities</th>
<th>Extraction sums of squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of passenger transportation</td>
<td>71.3%</td>
<td>49.82%</td>
</tr>
<tr>
<td>Volume of cargo transportation</td>
<td>76.7%</td>
<td></td>
</tr>
<tr>
<td>Volume of postal services</td>
<td>63.2%</td>
<td></td>
</tr>
<tr>
<td>After adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of passenger transportation</td>
<td>81.11%</td>
<td>65.788%</td>
</tr>
<tr>
<td>Volume of cargo transportation</td>
<td>81.11%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. FDI points in the proximity of highways

4. Results

Hierarchical linear modeling (HLM) is conducted to validate the research hypotheses.

According to Bryk and Raudenbush (1992), grand mean centering is performed on the variable of Level 1. This paper refers to performances as the outcome variable. Investment
performances are factored into the null model for the calculation of interclass correlation coefficients (ICC (1)), in order to confirm the necessity for multilevel analysis (Bryk & Raudenbush, 1992). The ICC of the investment performances in this paper is 0.074 (P < .01). Cohen (1988) suggested that if ICC is smaller than 0.059, indicating a low level of intra-class correlation. If it is between 0.059 and 0.138, it indicates a medium level of correlation. If the value is higher than 0.138, it indicates a high level of intra-class correlation. He supposed that a medium level of intra-class correlation means the possible presence of similarities. Therefore, if ICC is greater than 0.059, it is necessary to consider multilevel analysis; in other words, HLM should be used rather than GLM (generalized linear modeling). This paper continues to test the research hypotheses with HLM.

4.1. Main effect and mediation effect

To test the research hypotheses, Baron and Kenny (1986) argued that it is necessary to first confirm whether there is a significant correlation between independent variables (X; Mo; Me) and dependent variables in the examination of mediating and intervening effects. Table 2 shows that after the time factor is controlled, both variables Organization Slack (β=0.063; P<.01) and Entry Mode (β=3.211; P<.01) are statistically significant. Follow-up steps are then performed to test the hypotheses.
Table 2. Level-1 Main Effect

<table>
<thead>
<tr>
<th></th>
<th>M1-1</th>
<th>M1-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>369.056***</td>
<td>381.068***</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>38.403***</td>
<td>39.432***</td>
</tr>
<tr>
<td>FDI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Slack</td>
<td>0.063***</td>
<td></td>
</tr>
<tr>
<td>Entry Mode</td>
<td>3.211***</td>
<td></td>
</tr>
<tr>
<td>Deviance</td>
<td>303244.777</td>
<td>303111.063</td>
</tr>
</tbody>
</table>

In terms of main effects on Level 2, this paper controls the time effect and FDI effect. The results suggest that Infrastructure as a variable is not statistically significant ($\beta$=0.7677; $P>.05$). However, Labor Cost ($\beta$=50.713; $P<.05$) and HCRR ($\beta$= -10.113; $P<.1$) are both statistically significant.

Table 3. Level-2 Main Effect

<table>
<thead>
<tr>
<th></th>
<th>M1-3</th>
<th>M1-4</th>
<th>M1-5</th>
<th>M1-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>501.496***</td>
<td>500.906***</td>
<td>283.987***</td>
<td>519.430***</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>38.789*</td>
<td>38.774***</td>
<td>40.658***</td>
<td>37.785***</td>
</tr>
<tr>
<td>Level-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Slack</td>
<td>0.7677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.7677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Cost</td>
<td>50.7129**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCRR</td>
<td>-10.113*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deviance</td>
<td>303233.9854</td>
<td>303223.595</td>
<td>303221.218</td>
<td>303224.565</td>
</tr>
</tbody>
</table>
Baron and Kenny (1986) suggested that to explore mediating relationships, it is necessary to clarify the relationship among X, Mo, and Me, in Step 2. However, it is not possible to define a Level 2 variable as a dependent variable in the HLM process. Therefore, this paper refers to the results summarized in Table 5 to explain the X->Me relationship. M2-1 shows a significant and negative correlation between HCRR and Infrastructure. M2-3 indicates a significant and positive correlation between Entry Mode and Labor-cost.

<table>
<thead>
<tr>
<th>Level-2</th>
<th>M2-1</th>
<th>M2-2</th>
<th>M2-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>-.197**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Cost</td>
<td></td>
<td>.035</td>
<td>.144*</td>
</tr>
</tbody>
</table>

4.2. Cross-level mediation and moderated effect

The two sets of mediating effects in this paper are multi-level in nature. Models 3-1, 3-2, and 3-3 test multi-level mediating effects, and the results show that HCRR is not statistically significant (β=-7.938; P>.05). The value for Labor Cost declines from 50.713 to 47.380872, which remains significant (P<.05). This paper uses the mediating model developed by Baron and Kenny (1986). HCRR mediates the relationship among Infrastructure, Labor Cost, and Performance. Prior studies suggest that if X to Y is not statistically significant, it is still possible to continue the procedures (Kenny, Kashy, & Bolger, 1998; Shrout & Bolger, 2002). Therefore, it is possible to evaluate the relationship with correlation coefficients. Meanwhile,
HCRR as a variable does not mediate the relationship between Infrastructure and Labor Cost to Performance. However, Infrastructure ($\gamma = -.197^{**}$), Labor Cost ($\gamma = -.290^{**}$) is the antecedent of HCRR, while the correlation between HCRR and Performance is negative ($\beta = -10.113173^{*}$). In theory, it is still possible to infer a mediating relationship. Thus, H1a and H1b are supported.

Model 3-4 shows the relationship among Infrastructure, Entry Mode, and Performance. Entry Mode is statistically significant ($\beta = 3.283; P<.01$). The coefficient of Infrastructure drops from 0.768 to -2.836, which is not statistically significant ($P>.05$). Model 1-4 suggests that Infrastructure as an independent variable becomes insignificant, which is not consistent with the testing procedures designed by Baron and Kenny (1986). Thus, H2 is partially supported.

According to the testing procedures designed by Hofmann (1997) for intervening effects in HLM, the first step is to validate the significance of the Null Model. In the Random Coefficient Regression Model, Organization Slack ($\beta = 0.034; P<.05$) is statistically significant. In the Fixed Effects Model, Moderated Effect is statistically significant ($\beta = 0.030; P<.01$). Thus, H3 is significantly supported.
As seen above, HCRR causes intervening effects to Organization Slack and Performance. In other words, the HCRR of a given city undermines Organization Slack and brings about Performance.
Table 5. Cross-Level Mediation and Moderated Effect

<table>
<thead>
<tr>
<th></th>
<th>M3-1</th>
<th>M3-2</th>
<th>M3-3</th>
<th>M3-4</th>
<th>M4-1</th>
<th>M4-2</th>
<th>M4-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>500.906***</td>
<td>283.987***</td>
<td>312.5192***</td>
<td>528.786***</td>
<td>366.137***</td>
<td>519.430***</td>
<td>520.697***</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>38.774***</td>
<td>40.658***</td>
<td>39.728***</td>
<td>40.470***</td>
<td>38.186***</td>
<td>37.785***</td>
<td>37.4701***</td>
</tr>
<tr>
<td>Level-1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Organization Slack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0343**</td>
<td>0.041***</td>
<td></td>
</tr>
<tr>
<td>Entry Mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.2830***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.7677</td>
<td>1.864</td>
<td>-2.836</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor cost</td>
<td>50.71286***</td>
<td>47.381**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCRR</td>
<td>-7.938</td>
<td></td>
<td></td>
<td></td>
<td>-10.113*</td>
<td>-13.248**</td>
<td></td>
</tr>
<tr>
<td>Organization Slack (mean)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCRR * Organization Slack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0295***</td>
<td></td>
</tr>
<tr>
<td>Deviance</td>
<td>303223.5953</td>
<td>303221.218</td>
<td>303205.418</td>
<td>303082.3180</td>
<td>303254.387</td>
<td>303224.565</td>
<td>303239.578</td>
</tr>
</tbody>
</table>
5. Conclusions

This study integrated regional institutional theories and TCE. However, as the TCE theory can only be tested in a qualitative manner, the testing of actions taken by companies is based on theoretic descriptions as the correlation between entry models and performances (Brouthers, Brouthers, & Werner, 2003). In fact, as it is costly and time-consuming to build networks in local markets, joint ventures are effective means to enter new markets with limited investment. MNEs mostly intend to set up overseas subsidiaries and work with local companies in order to reduce the political risks of host countries. This means that joint ventures remain the second best choice, next to sole ownership (Hennart, 1988). When it is difficult to gauge expected asset values in different industries, joint ventures help to collect information and mitigate the problems associated with an insufficient knowledge of assets (Balakrishnan & Koza, 1993).

The theoretic implications of this paper are identical to the specific assets mentioned in the transaction cost theory. Local infrastructures and human resources in China affect the choices made by the control mechanisms of joint ventures set up by MNEs (David & Han, 2004). With faced with high uncertainties in emerging markets, MNEs emphasize the importance of institutional environments. DiMaggio and Powell (1983) stressed the importance of enforceability, regulations, and imitability. This study
focused on the multi-level analysis of relative risks to Taiwanese businesses in the
class of local social capital, and explored the behavior differences as a result of
entry models and performances. This study treated average wages as a proxy for
Labor Cost. Rising wages are inevitable for labor-intensive tech manufacturers in
China. Wages are implicitly reflective of local conditions. The lower the
environmental uncertainties (compared with cities of superior economic/political
setups and infrastructure), the more comfortable Taiwanese companies will be to
increase investments for better performances. However, rising wages will pose a
challenge to managerial capability. If revenues do not increase accordingly, or costs
cannot be reduced to offset rising wages via relocations or automation, profits will shrink.

Regarding increased risks, strategic forces and IB lengthen the distance between the
host country and the home country, according to the Uppsala School of
Internationalization. However, simply tackling strategic forces and IB may be
insufficient regarding studies on geographic regions and connecting economics, due
to a lack of specifics. Few studies have examined the spatial interactions between
companies in the investigation of inner company factors and country/geographic
characteristics (Beugelsdijk, 2007).

This study thus performed a spatial analysis in the empirical studies of Taiwanese
companies in mainland China, and achieved the following three academic contributions:

1) Research methodology: This study visualized geographic information and made it easy to understand the geographic distribution investments of Taiwanese businesses. However, spatial auto-correlation violates the assumptions that samples are independent in the context of quantitative geography, which renders the traditional approach of econometrics invalid. Therefore, HLM was used to resolve erroneous assumptions in the conventional OLS approach.

2) Theoretic contributions: The concept of relative risk stems from the domain of public health. Traditionally, IB or strategic studies do not explore the issues associated with relative risks. However, the clustering of relative risks is a fact. Hence, this study incorporated this concept in the explanation of the effects on the performance of Taiwanese joint-ventures.

3) Practical contributions: Taiwanese businesses exhibit a specific pattern in their outward investments. Their FDIs tend to be conservative in highly uncertain countries or regions. Initial investments can be viewed as sunk costs and may not be recoverable for joint ventures. Therefore, this study included the concept of organizational slack in the examination of companies.
This study integrated theories concerning transaction costs and systems, and
developed antecedent causes, and intervening and interference factors, by referring to
the perspectives of economic geography. Despite a lack of qualitative explorations
due to the use of secondary data in the analysis, this study achieved major
breakthroughs in research methodology and theoretic contributions.


Buckley, P. J., &Ghauri, P. N. 2004. Globalisation, economic geography and the strategy of


