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China Plus One: An Analysis of Taiwanese High-Tech Industries FDI in China and Vietnam from the Perspectives of the Eclectic Paradigm and Technology Transfer

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Abstract

This study adopts a firm-level perspective, integrating the Eclectic Theory (OLI Paradigm) and technology transfer perspectives to establish a dynamic "OLI-TT" integrated framework. It examines the decision-making factors influencing FDI location choices in China and Vietnam for Taiwanese high-tech firms. A survey was administered to mid-level and senior managers from 168 Taiwanese parent companies with investments in China and Vietnam, utilizing a 7-point Likert scale. The research methodology involved first assessing the goodness-of-fit between the theoretical model and the collected data, followed by the application of conditional logistic analysis to empirically test 14 research hypotheses derived from the OLI framework and technology transfer theory.

The Empirical Results Indicate

- All hypotheses were statistically supported ($p < .05$), validating the explanatory power of the "OLI-TT" framework.
- Investment experience (OR = 2.91) and market factors (OR = 2.61) were the strongest facilitating factors, while cultural distance (OR = 0.33) and investment risk (OR = 0.35) were the strongest inhibiting factors.
- Technology performance variables explained 32.7% of the location decision variance ($\Delta R^2 = .327$).
- The model demonstrated good fit (Hosmer-Lemeshow test, $p = .324$), high overall explanatory power (Nagelkerke $R^2 = .68$), and statistical significance ($\chi^2 = 178.94$, $p < .001$).

The research confirms that under the China Plus One strategy, Taiwanese firms simultaneously weigh traditional location-specific advantages and technology transfer performance, with risk aversion being a critical decision factor. This provides an important empirical foundation for investment theory in emerging economies.

Keywords: Technology Transfer, FDI (Foreign Direct Investment), Location Selection, Eclectic Theory (OLI), China Plus One

Introduction

This study aims to examine the key factors influencing Taiwanese high-tech industry investments in China and Vietnam under the "China Plus One" strategy, utilizing a dynamic "OLI-TT" integrated framework.

Research Background and Motivation

Research Background

China has long held a dominant position in global manufacturing. However, Taiwanese businesses have gradually become aware of the risks associated with over-reliance on a single production base, including rising costs and geopolitical uncertainties, prompting a reassessment of supply chains. The U.S.-China trade war and the COVID-19 pandemic have accelerated this trend. Taiwanese firms are actively relocating manufacturing

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centers out of China and seeking to establish secondary overseas production bases, with Vietnam emerging as a primary destination under the "China Plus One" strategy. This strategy aims to mitigate concentration risks through the diversification of manufacturing and supply chains. Gereffi examines the restructuring trends of Global Value Chains in the wake of the U.S.-China trade war and the COVID-19 pandemic, analyzing the strategic shift of firms from a sole focus on efficiency to a dual emphasis on efficiency and resilience [1]. This provides a macro-level context for the "China Plus One" strategy explored in this study.

Taiwan is a relatively developed, newly industrialized economy (NIE) in Asia, home to a significant number of firms engaged in foreign direct investment [2,3]. Taiwanese firms exhibit many characteristics typical of NIEs conducting FDI, including ownership-specific advantages, and market-seeking, efficiency-seeking, and resource-seeking motivations [4]. As a whole, China attracts more Taiwanese FDI than any other country [5]. Consequently, this study seeks to investigate the key drivers of FDI by Taiwanese high-tech industries (e.g., computer, semiconductor, optoelectronics) in China and Vietnam amidst the U.S.-China trade war and the "China Plus One" trend, and to clarify the interactive mechanisms between technology transfer and location decisions. Differing from the traditional Eclectic Paradigm (OLI) of FDI theory, this study incorporates a technology transfer perspective to conduct an in-depth analysis of the factors influencing Taiwanese investment decisions in China and Vietnam. Since implementing its Renovation policy in 1986, FDI has been crucial for Vietnam's economic development.

The advantages of Vietnam's investment environment that motivate Taiwanese companies to invest there primarily include: market potential, abundant and low-cost labor, geographical proximity, rich natural resources, cultural similarities, and government incentives [6]. Both China and Vietnam have undergone transitions from planned economies to market-oriented systems, attracting foreign capital through policy incentives and improvements in the business environment. Despite political tensions across the Taiwan Strait, economic exchanges remain robust, making China the largest recipient of Taiwanese FDI for a long period. In 2021, Taiwanese FDI in China reached $5.863 billion, compared to $1.061 billion in Vietnam. Given that both China and Vietnam are significant investment destinations for Taiwanese businesses, this study selects these two locations as comparative subjects to investigate the location choices and driving factors behind Taiwanese FDI.

Table 1: Macroeconomic Indicators: Vietnam vs. China (2021)

Economic Indicator	Vietnam	China
GDP Growth Rate (%)	2.58	8.1
GDP (USD billions)	362.6	17,813.5
GDP per Capita (USD)	2,973	12,613
Industrial Production Growth Rate (%)	4.05	4.3
Imports (USD billions)	332.2	3,343.8
Exports (USD billions)	336.3	2,671.7
FDI Inflow (USD billions)	31.15	173.5
Taiwanese FDI (USD billions)	1.061	5.863

Sources: Taipei Economic and Cultural Office in Ho Chi Minh City; National Bureau of Statistics of China; Investment Commission, Ministry of Economic Affairs (Taiwan).

Research Motivation

Lund, 2020 quantifies the concentrated risk within global supply chains and notes that multinational corporations are building resilience by establishing new production bases in regions such as Southeast Asia. This directly corroborates the motivations behind Taiwanese firms' investments in Vietnam.

When Taiwanese firms make FDI location decisions, they face a complex array of assessment factors. The research motivations of this study are twofold: (1) to dissect the key influencing factors driving the location choices of Taiwanese high-tech industries in China and Vietnam under the "China Plus One" strategic trend; and (2) to address a significant gap in the existing literature by integrating the strategic rationale of "China Plus One" with the "OLI-TT" theoretical framework for an empirical investigation of Taiwanese high-tech FDI decisions regarding these two specific locations. This study aims to provide a more nuanced and context-specific understanding that prior research has lacked.

Theoretical Gaps

This study investigates the FDI decisions of Taiwanese high-tech industries under the "China Plus One" strategy. The existing literature reveals three primary theoretical gaps

Static Limitations of the OLI Paradigm

The traditional Eclectic Paradigm (OLI) primarily focuses on static, single-location evaluations. It struggles to explain the dynamic decision-making involved in multi-location, complementary layouts within the context of supply chain restructuring.

However, in the turbulent environment of the U.S.-China trade war and supply chain realignment, multinational corporations have shifted their decisions from seeking an optimal single location towards building resilient, multi-location, and complementary layouts [7]. This study addresses this gap in the OLI paradigm regarding synergistic location strategies by providing empirical evidence of a dual-track decision-making mechanism.

Theoretical Disconnect Between Technology Transfer and Location Choice

Existing literature often treats Technology Transfer (TT) and location selection as independent domains, overlooking their dynamic interplay. On one hand, location choice literature frequently treats technology as a given Ownership advantage (O) or Internalization motive (I), neglecting how the dynamic performance feedback-generated from the interaction between transferred technology and the local environment-subsequently influences future investment decisions [8]. This study constructs a dynamic "OLI-TT" integrated framework to systematically incorporate the supply-side, demand-side, and performance aspects of technology transfer into the investment decision-making process.

Oversimplified Interpretation of the "China Plus One" Strategy

Existing studies, often grounded in macro-level geopolitical risk and cost-driven perspectives, tend to oversimplify the "China Plus One" strategy as a passive risk-hedging or cost-reduction tactic [9]. The empirical findings of this study, however, reveal that Taiwanese firms are adopting a proactive functional division strategy, thereby challenging the simplistic substitution narrative prevalent in current discourse.

Research Questions

The research questions are formulated as follows

- What is the key location-specific advantages (e.g., cost, market, policy incentives, infrastructure, agglomeration effects, risk) and firm-specific factors (e.g., investment experience) that significantly influence the location choice (China vs. Vietnam) of Taiwanese high-tech firms under the "China Plus One" strategy?
- How does technology transfer, encompassing its strategic demands (e.g., for local market adaptation, access to talent/knowledge) and expected performance outcomes (e.g., in human resources, production processes, market competitiveness), dynamically interact with and adjust the traditional OLI factors within the proposed "OLI-TT" framework to influence this location decision?
- How does the empirical validation of the "OLI-TT" framework confirm the existence of a distinct dual-track investment strategy, where China and Vietnam are selected for complementary functional roles (e.g., market penetration vs. efficient export manufacturing) rather than being simple substitutes?

Research Objectives and Theoretical Contributions

Research Objectives

- To construct a dynamic "OLI-TT" integrated framework.
- To compare the differences in investment decision factors between the two locations by conducting a questionnaire survey of 168 Taiwanese firms invested in China and Vietnam and employing econometric methods.
- To provide concrete strategic recommendations for Taiwanese firms regarding their configuration in China and Vietnam, based on the empirical findings.

Theoretical Contributions

This study proposes a dynamic "OLI-TT" integrated framework, offering the following theoretical contributions

- **Dynamizing the OLI Paradigm**: It elucidates the dynamic weighting and complementary relationships of OLI advantages within the dual-track layout of the "China Plus One" strategy.
- **Integrating Technology Flows**: It elevates technology transfer from a static variable to a dynamic process involving interactive feedback with location decisions.
- **Deepening Strategic Connotation**: It provides a micro-theoretical foundation for the "China Plus One" strategy that goes beyond risk and cost considerations, emphasizing its essence as functional division of labor based on comprehensive "OLI-TT" assessments.
- **Providing a Decision-Making Tool**: It establishes a key factors assessment matrix to assist Taiwanese firms in optimizing their investment location decisions. Through empirical testing involving 168 Taiwanese firms, this study provides novel theoretical perspectives and an empirical basis for FDI research in the context of emerging economies and supply chain restructuring.

Theoretical Analysis and Research Hypotheses

Theoretical Analysis

Eclectic Theory (OLI Paradigm)

- The Eclectic Theory (OLI Paradigm), proposed by Dunning, aims to explain the decision-making behavior of firms undertaking foreign direct investment (FDI) [10]. While the paradigm has been a primary explanation for economic growth, and its simplicity and generality have allowed compatibility with many schools of economics, its continued applicability faces new challenges in light of recent developments associated with the process of globalization [11]. This theory integrates three key advantages:

Ownership-specific Advantages (O)

- Stemming from the resource-based view, this refers to the unique assets possessed by a firm-such as technology, brands, or managerial capabilities-that give it a competitive edge in foreign markets and enable it to generate excess profits by leveraging these assets internally.

Location-specific Advantages (L)

- Based on the principle of comparative advantage, this refers to the specific conditions of a host country-such as market size, production costs, infrastructure, or policy incentives-that make investment there more beneficial than exporting or licensing. Michael E. Porter noted that factors affecting a firm's competitiveness include a nation's factor conditions, demand conditions, the presence of related and supporting industries, and firm strategy, structure, and rivalry [12]. This indicates that a firm's choice of investment location depends not only on its own strategy, structure, and competitive conditions but also significantly on the host country's possession of specific factors for particular industries, other supporting industries, and demand conditions, with the government playing a decisive role.

Internalization-specific Advantages (I)

- Originating from transaction cost theory, this suggests that when a firm determines it is more efficient and less costly to exploit its ownership advantages internally through FDI than through market transactions (such as licensing or trade), it will choose direct investment over external cooperation.
- Dunning first proposed this theory in 1979 and later, in 1993, further categorized the motivations for FDI into four types: resource-seeking, market-seeking, efficiency-seeking, and strategic asset-seeking. Due to its integrative and generalizable nature, the OLI model has become a widely accepted theoretical foundation for FDI in both academia and practice [13]. However, its applicability continues to be challenged and to evolve under new global circumstances. The view of the co-evolution of firms and territories is not new in the literature; Dunning was an early proponent of this holistic approach, a perspective also implicit in his Eclectic Paradigm [14].

Technology Transfer (TT) and Taiwanese Firms' Investment Layout

In the global expansion of Taiwanese high-tech industries, a prevalent model is "retaining R&D in Taiwan while transferring manufacturing overseas." Besides developing new technologies in-house, obtaining technology usage rights through licensing agreements with foreign firms is another pathway for Taiwanese high-tech industries to enter markets [15]. When multinational corporations from developing countries engage in R&D activities in other developing countries, these overseas R&D centers often act as technology transfer units, providing second-generation technology transfer, or seeking access to human capital [16,17]. Given that technology is a core competitive advantage for these firms, technology transfer associated with FDI becomes a critical link. This study focuses on the technology transfer behaviors of Taiwanese firms in Vietnam, an area where relevant literature is still scarce, lending exploratory significance to this research.

Analyzing from a technology transfer perspective, the transfer of technology from a Taiwanese parent company to its overseas subsidiaries can yield multiple benefits: including enhancing the value-added of the parent company's products, expanding production scale, and promoting product diversification and technological upgrading.

Such technological deployment holds strategic intent. Firms typically choose to expand overseas in technological fields where the home country possesses a comparative advantage. By entering markets with less restrictive regulatory environments early, they seize opportunities and establish first-mover advantages. Internalized technology transfer is often achieved through wholly-owned subsidiaries, whereas externalized transfer tends to favor joint ventures [18]. Furthermore, abundant R&D talent resources in the host country are also a significant factor attracting multinational corporations to establish R&D presence. From a macro perspective, an interactive relationship exists between technology transfer and FDI: investment inevitably accompanies technology introduction, leading to technology spillover effects, which become an important channel for host countries to acquire advanced knowledge and technology. As local technological capabilities improve, foreign-invested R&D centers may also play a more active role within the multinational corporation's global innovation network, thereby further strengthening the location-specific advantages of the region.

Theoretical Framework

This study integrates the perspective of technology transfer with the traditional Eclectic Theory (OLI Paradigm) to construct an innovative dynamic "OLI-TT" integrated framework. This theoretical framework significantly enhances the explanatory power for decision-making in high-tech industries by adding the technology transfer dimension to the original three advantages of Ownership, Location, and Internalization. The framework not only breaks through the limitations of the traditional OLI theory but also provides a more comprehensive analytical tool for FDI research by incorporating technology transfer factors. This theoretical innovation enriches the academic literature in the field of international business and offers a new theoretical perspective for understanding the global strategic layout of contemporary high-tech firms, as shown in Figure 1.

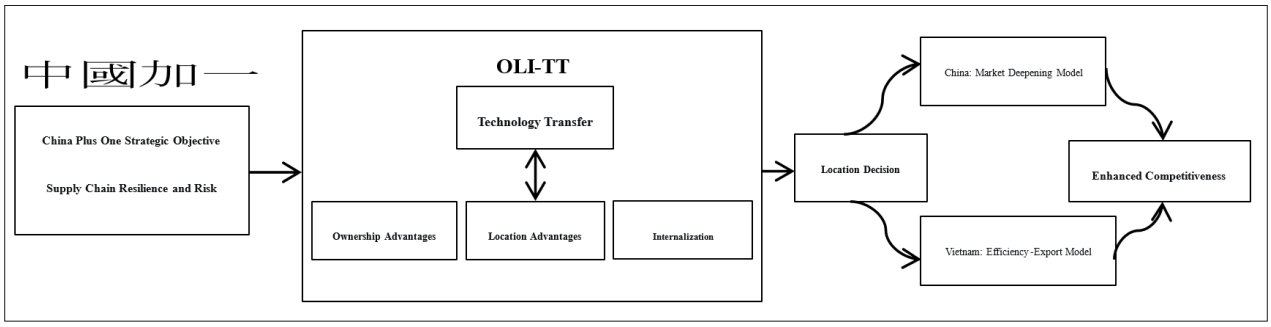

Figure 1: The "OLI-TT" Theoretical Framework

Note: The framework visually emphasizes the critical, dynamic interplay between Location advantages and Technology Transfer, moving beyond a static list of factors. It aligns strategic drivers with specific location roles (China for market, Vietnam for efficiency) based on the integrated "OLI-TT" evaluation, culminating in the overarching strategic objectives.

The research theoretical framework illustrates the dynamic logic of the "OLI-TT" integrated framework

Strategic Driver: The strategic goals of achieving supply chain resilience and risk diversification drive the entire decision-making process.

Core Mechanism: To achieve these goals, the firm conducts a dynamic "OLI-TT" comprehensive assessment:

- **Ownership-specific Advantages (O)**: The firm's internal capabilities (e.g., investment experience, scale).
- **Location-specific Advantages (L) & Technology Transfer (TT):** A key two-way interactive relationship exists between these two components (indicated by the double-headed arrow in the figure). This means that location conditions influence the success of technology transfer, while the performance of technology transfer feeds back and reinforces the long-term value of the location. This interaction is the core innovation of this study's theoretical model.
- **Internalization-specific Advantages (I):** The firm's capability for risk control.

Strategic Output

Based on the dynamic "OLI-TT" assessment, a function-oriented, dual-track decision is formed:

- **China:** Leveraging its market and clustering advantages, positioned as a "Market Deepening Base."

- **Vietnam:** Utilizing its cost and policy advantages, positioned as an "Efficiency Export Hub."

Ultimate Goal

This complementary, parallel dual-track layout ultimately works synergistically to achieve the goal of enhancing global competitiveness and supply chain resilience.

Theoretical Value

- Empirical results show that technology performance variables explain 32.7% of the variance.
- It verifies the crucial role of technology transfer in investment decision-making.
- It provides a dynamic analytical framework for investment theory in emerging economies.

This theoretical framework comprehensively presents the decision-making logic from strategic objectives to concrete layout, highlighting the dynamic interactive relationships among the elements. It powerfully demonstrates that "China Plus One" is not merely simple capacity replacement, but rather a strategic reorganization by multinational corporations based on comprehensive "OLI-TT" considerations, targeting supply chain resilience and risk dispersion. This constitutes the main theoretical contribution of this study to international business theory and empirical research on "China Plus One".

Cantwell incorporates innovation and knowledge creation into the theory of international business, emphasizing the dynamic evolution of Ownership-specific advantages (O). This provides the theoretical foundation for this study to consider technology transfer performance as a feedback mechanism for strengthening O advantages.

The variables are explained as follows

Ownership-specific Advantages (O)

- This refers to the unique and sustainable proprietary assets possessed by a firm, such as scale, multinational experience, and differentiated product capabilities. This study selects "Firm Size" and "Investment Experience" as its independent variables.

Location-specific Advantages (L)

- This refers to the investment environment conditions of the host country, including factors such as cost, market, policy, culture, infrastructure, and industrial agglomeration. This study uses these six dimensions as independent variables for location advantages.

Internalization-specific Advantages (I)

- This reflects the firm's propensity to use internal organization rather than market transactions for international operations to avoid market failures. As product standardization and investment risk increase, firms tend to internalize their advantages through FDI. This study uses "Investment Risk" as its independent variable.

Technology Transfer Performance (TT)

- As a key dimension supplementing the OLI framework, technology transfer performance is categorized into three aspects: human resources, product/process, and market competition. It also incorporates the supply and demand motivations for establishing overseas R&D to fully explain the decision-making mechanism of Taiwanese investment in China and Vietnam.

In summary, the core theoretical perspective of this research is the "OLI-TT" dynamic integrated framework, which breaks through the static thinking of the traditional OLI paradigm to explain the dual-track investment decisions of Taiwanese firms under the "China Plus One" strategy.

The core arguments are as follows

- Dynamic Advantage Configuration
- Investment decisions shift from a "single optimal location" to "multi-location functional division of labor".
- Firms proactively restructure their value chains based on the comparative advantages of China (market-oriented) and Vietnam (cost-oriented).
- Technology Performance Feedback Loop
- Technology transfer is not only the "cause" of investment but also the "effect" that verifies location value.
- The performance (human resources, process, market) after technology implementation provides feedback that influences subsequent investment decisions.
- This forms a dynamic cycle of "Investment → Technology Transfer → Performance Evaluation → Re-investment". (C) Essence of Strategic Optimization
- "China Plus One" is not simply risk avoidance, but a proactive layout based on a comprehensive "OLI-TT" assessment.
- Firms simultaneously weigh facilitating factors (market, experience) and inhibiting factors (risk, cultural distance).

This enables the realization of a complementary strategy: "Deepening the market in China" and "Efficient manufacturing in Vietnam".

This framework provides a new perspective for FDI research in the era of supply chain restructuring, emphasizing the dynamism of advantage configuration and the crucial feedback role of technology performance.

Research Hypotheses

Based on the "OLI-TT" theoretical framework, 14 testable research hypotheses are proposed for the 14 variables encompassed by the four dimensions of Ownership, Location, Internalization, and Technology Transfer, establishing an empirical foundation for testing the framework.

Dependent Variable

Investment Location Choice (China = 0; Vietnam = 1).

Independent Variables

- Ownership-specific Factors
- Most empirical research on FDI location determinants focuses on ownership advantages. Drawing on relevant empirical studies of FDI location, firm size and investment experience are used as independent variables [19-21]. a. Firm Size

FDI literature finds that the firm size of multinational corporations significantly influences their investment location choice, as larger firms typically have an enhanced ability to enjoy economies of scale and scope and invest in advanced technology [22]. Aw and Lee emphasize the connection between firm heterogeneity and location choice. Their methodological approach lends support

to this study's incorporation of ownership advantage variables, such as firm size and investment experience, into a conditional logit model for analysis.

H1: Firm size has a positive influence on Taiwanese FDI decisions in China and Vietnam

Investment Experience

Investment experience is particularly crucial for multinational corporations to understand the operational environment of emerging economies like China [23]. Empirical studies confirm that host country experience gained through a series of overseas investments, along with broader international expansion capabilities, indeed influence firms' decisions regarding subsequent foreign investments [24]. Kano and Verbeke advocate for reconstructing multinational enterprise theory from its microfoundations (firm-specific capabilities). This aligns with this study's approach of integrating the OLI paradigm and technology transfer (TT) at the firm level and underscores the significance of firm heterogeneity (e.g., investment experience).

H2: Investment experience has a positive influence on Taiwanese FDI decisions in China and Vietnam.

Location-specific Factors

Based on relevant empirical studies on FDI location choice, six variables representing location advantages are selected: cost factors, market factors, investment incentives, cultural distance, infrastructure, and agglomeration [21, 25 - 27]. Lin and Yeh, analyzing whether Taiwanese firms invest in China, found that firms facing greater pressure from rising wages and market competition, leading to larger profit declines, and those less capable of upgrading to meet challenges, generally had a higher probability of investing in mainland China [28]. Taking China as an example, the most frequently tested location advantage factors include market size, infrastructure development, labor costs, labor quality, exchange rates, openness, level of foreign investment, R&D level, and country risk [29,30].The empirical study by Nguyen and Nguyen investigates the determinants of FDI attraction across Vietnamese provinces and cities, highlighting the interactive effects of industrial agglomeration, local incentive policies, and infrastructure [31]. Their findings enrich this study's understanding of Vietnam's location-specific advantages (L) within the OLI framework.

Cost Factors

Vernon pointed out that the host country providing cheaper inputs is an important determinant for transferring production capacity abroad [32]. Cost factors primarily include transportation costs, labor costs, and labor quality. Research found that Taiwanese firms' different investment locations and internationalization modes vary; investment in Southeast Asia and mainland China by Taiwanese firms aims to reduce costs, with most firms having little export sales before establishing factories [33].

H3: Cost factors have a negative influence on Taiwanese FDI decisions in China and Vietnam.

Market Factors

Market factors include local market size and market potential. As host country demand grows to a scale that makes local production more cost-effective, foreign firms tend to enter export markets via FDI to serve the market [32]. Numerous empirical studies confirm a positive correlation between the market size of developed countries and FDI inflows [34,35].

Faced with huge market potential, larger firms tend to choose market-seeking FDI, allowing them firstly to achieve economies of scale to lower unit costs, and secondly, to establish a long-term market position. Many empirical studies confirm the significant positive impact of host country market potential on FDI location choice [36, 37].

H4: Market factors have a positive influence on Taiwanese FDI decisions in China and Vietnam.

Investment Incentives

Among investment incentives, some studies find that lower corporate tax rates as an investment incentive have a positive impact on investment decisions [38,39].

H5: Investment incentives have a positive influence on Taiwanese FDI decisions in China and Vietnam.

Cultural Distance

Cultural factors determine a firm's acceptance and adaptability to the host country's social context, which indeed influences FDI location selection [40,41]. Hofstede Insights provides quantified scores for China and Vietnam across six cultural dimensions, including Power Distance, Individualism, and Uncertainty Avoidance [42]. This dataset serves as the core tool for this study to calculate and operationalize the “cultural distance” variable, with specific analysis thresholds set (e.g., a Cultural Difference Index $\leq 2.5/6$).

H6: Cultural distance has a negative influence on Taiwanese FDI location choices in China and Vietnam. e. Infrastructure

Literature indicates that infrastructure, such as power supply, transport facilities, and communication networks, is a significant factor in FDI location choice [43,44]. Locations with good infrastructure are more attractive than those with poor infrastructure [26, 45]. World Bank provides objective comparative data on infrastructure, customs efficiency, and logistics capabilities for China and Vietnam [46]. This data serves as a critical basis for this study in operationalizing the “infrastructure” variable and for setting specific thresholds in the analysis, such as requiring a Logistics Performance Index (LPI) score ≥ 3.5.

H7: Infrastructure has a positive influence on Taiwanese FDI decisions in China and Vietnam.

Agglomeration

Agglomeration economies refer to positive externalities and economies of scale associated with the spatial concentration of activities and related production facilities [47]. As firms cluster in a region, it becomes easier to acquire competitors' knowledge at lower cost and to cultivate and attract a large pool of specialized labor [48]. Existing literature shows that agglomeration attracts FDI inflows because it provides positive externalities and economies of scale related to the spatial concentration of economic activity and the location of related production facilities [49].

H8: Agglomeration effects have a positive influence on Taiwanese FDI decisions in China and Vietnam.

Internalization-specific Factors

Internalization advantages stem from a firm's management and

coordination capabilities in conducting activities internally within the value chain. The concept of internalization advantage reflects the firm-specific intention to choose FDI for producing goods internally abroad, versus cross-border licensing or exporting.

Investment Risk

Investment risk is an important factor to consider, especially in developing countries. Indeed, political and macroeconomic stability, and transparent laws and regulations concerning foreign ownership and profit repatriation are important risk variables for potential investors [50]. Agarwal and Ramaswami also found a negative correlation between environmental instability and FDI inflows [51]. The perspective of Narula and Verbeke on how multinational enterprises internalize the management of complex knowledge assets and associated risks provides theoretical support for this study's setting of investment risk as a key internalization-specific advantage (I) variable.Van Assche examines the international business environment from a policy and trade perspective, particularly in the context of rising global uncertainties [8,9]. His insights into how policy-driven disruptions impact multinational enterprises lend significant theoretical weight to this study's argument that geopolitical risks are a key driver behind the adoption of supply chain diversification strategies, such as "China Plus One."

H9: Investment risk has a negative influence on Taiwanese FDI decisions in China and Vietnam.

Technology Transfer Factors

After a firm enters a foreign market, because local firms can use imitation and replication to narrow the technology gap with the firm itself, the amount of technology transfer during overseas investment also significantly affects its profits [52]. As technology transfer is a key tool for multinational companies entering overseas markets, the form of technology transfer is usually chosen based on different circumstances, such as environmental factors, the firm's own characteristics, and organizational goals [53]. Lin and Yuan discuss the challenges and necessary extensions facing the traditional OLI paradigm in the context of new globalization trends [54]. Their analysis, which highlights the evolving role of technology capabilities in shaping firm-specific advantages, informs this study's approach to integrating new dimensions such as technology transfer to enhance the paradigm's explanatory power. Contractor, analyze the two-way nature (supply-side and demand-side) of technology transfer in large multinational investment projects and its performance outcomes [55]. Their framework, which delineates the motivations and capabilities on both the providing and receiving ends, provides a foundational reference for this study in operationalizing the demand-side (H13) and supply-side (H14) hypotheses of technology transfer, as well as its multi-dimensional performance variables (H10-H12).

This study draws on related research on technology transfer performance by Santikarn, Lin, and Lu [56-58], dividing technology transfer performance into three indicators: human resources performance, product/process performance, and market competition performance, plus the two indicators from Grandstrand: demand-side and supply-side factors for overseas R&D establishment motivation [59].

Human Resources Performance

In a highly competitive environment, accessing locally advantaged technology and excellent talent is also a consideration in location choice [60]. Zhao and Reisman systematically review the dimensions for measuring technology transfer performance, with particular emphasis on human resource development and the capacity for local adaptation. Their work directly supports this study's operationalization of "human resource performance" and "local modification capability" as key Technology Transfer (TT) indicators.

H10: Human resources performance has a positive influence on Taiwanese FDI decisions in China and Vietnam. b. Product/Process Performance

Reddy and Zhao proposed that the input of imported capital goods and technology can directly improve production efficiency in the production process [61]. Santikarn suggested that technology transfer performance should be considered in terms of effectiveness, proposing evaluation dimensions including: the effective application of new technology in the new environment, effective mastery of transferred technology by local employees, the ability to apply the technology to other firms in the same industry, and employees' ability to modify the technology according to local specific needs or different purposes [56].

H11: Product/process performance has a positive influence on Taiwanese FDI decisions in China and Vietnam.

Market Competition Performance

The purpose of a firm conducting technology transfer is to strengthen the quality of the technology recipient and enhance its own competitiveness [62].

H12: Market competition performance has a positive influence on Taiwanese FDI decisions in China and Vietnam.

d. Demand-side Grandstrand et al. divided motivations for establishing overseas R&D into demand-side and supply-side factors. Anand and Kogut stated that in a highly competitive environment, accessing locally advantaged technology and excellent talent is also a consideration in location choice [61]. Kumar, studying variables affecting the location of overseas R&D activities, found that the host country's market size, technology, resources, and capabilities deeply influence overseas R&D activities [63].

The demand-side includes

- The need for technology transfer between headquarters and subsidiaries.
- The need to access foreign markets and respond to local demands, or to respond to specific local market needs to enhance company capabilities.
- The need for specific customer assistance in product development activities.

H13: The demand-side factors for overseas R&D establishment motivation have a positive influence on Taiwanese FDI decisions in China and Vietnam.

e. Supply-side Following from above, the supply-side includes:

- Rising costs of independent technology development; division of labor can reduce R&D costs.
- The firm needs to obtain broader expertise and technology sources through international division of labor.

- Access to emerging technologies developed in specific regions.
- Access to excellently trained overseas professionals.
- Leveraging foreign local scientific and academic infrastructure or obtaining region-specific proprietary technical knowledge.

Hypothesis	Theoretical Construct	Operational Definition	Scale Reliability
H1	Firm Size	Number of employees: 1=≤200, 2=201-350, 3=351-500, 4=>500	
H2	Investment Experience	Number of overseas investment projects in past 9 years (weighted average)	0.87
H3	Cost Factors	Labor/land/transportation cost advantages (mean of L1-L4 items)	0.91
H4	Market Factors	Market size/growth potential (mean of L5-L9 items)	0.89
H5	Investment Incentives	Tax incentives/subsidy attractiveness (mean of L10-L14 items)	0.93
H7	Infrastructure	Energy/transportation/communication quality (mean of L15-L19 items)	0.92
H8	Agglomeration Effects	Industrial cluster density (mean of L20-L22 items)	0.88
H9	Investment	Policy stability/social risk (mean of	0.90

H14: The supply-side factors for overseas R&D establishment motivation have a positive influence on Taiwanese FDI decisions in China and Vietnam.

Table 2: Variable Operational Definitions and Reliability Analysis

	Risk	L23-L25 items)	
H10-H12	Technology Transfer Performance	Human resources/process/market performance (mean of TT1-TT9 items)	0.94
H13	Technology Demand-side	Local market response needs (mean of TT10-TT12 items)	0.86
H14	Technology Supply-side	R&D resource acquisition capability (mean of TT13-TT15 items)	0.89

Note:

- Firm size was measured by a single item; hence no reliability coefficient was calculated.
- All construct reliability coefficients exceeded 0.70, indicating good internal consistency.

Variable Selection and Model Design

Research Design

The questionnaire survey method and conditional logit model were employed for the following reasons

Questionnaire Survey Method

- Conducting surveys with mid-to-senior managers effectively captures the characteristics of FDI management decisions in a quantifiable manner.
- The exploratory nature of this research aims to investigate the factors influencing Taiwanese FDI in China and Vietnam using a survey approach within a new conceptual framework.
- This method is most suitable for obtaining and analyzing micro-level variables related to multinational corporations' FDI.

Conditional Logit Model

- This model is appropriate for binary choice decision analysis, used to examine the impact of location determinants on the choice between China and Vietnam for investment by Taiwanese high-tech industries.
- The model assumes investors choose the location that maximizes their profit, helping to explain differences in investment strategies and the relationships between firm-specific factors.
- As the dependent variable is binary categorical and the independent variables include both categorical and interval data, this model was selected as the primary statistical analysis tool.

Questionnaire Survey Method

Questionnaire Development and Reliability Testing Standards: Questionnaire items were developed based on Yulong Liu and related literature, then revised after review by three expert scholars and a pre-test in five companies to enhance clarity and appeal [64]. The questionnaire used a 7-point Likert scale to measure respondents' perceptions of FDI influencing factors, a tool proven reliable and valid in international business research. For reliability testing, Cronbach's $\alpha > 0.7$ was adopted as the acceptable standard.

Sample Design

Survey Respondents

The survey targeted mid-level and senior managers at parent companies of Taiwanese high-tech industries (e.g., information technology and computers, semiconductors, optoelectronics, biotechnology, mobile communications, machinery, panels, others) with FDI in China or Vietnam. As FDI decisions are often made at this level, this method is widely used and

validated in international business research. The questionnaire was administered anonymously and included a data authenticity statement.

Sample Firms and Sampling Method

Purposive sampling was used for this exploratory research. Sample firms were high-tech industry companies with operational experience in both China and Vietnam. Sample sources included registration data from the National Federation of Industries for Taiwanese businesses in China, data from the Investment Commission of the Ministry of Economic Affairs(MOEA), The official and authoritative time-series data on Taiwanese direct investment in Mainland China and Vietnam, provided by the Investment Commission of MOEA, serves as the crucial data source for this study to confirm investment trends, conduct sample stratification, and perform background analysis., and membership directories of Taiwanese businesses in Vietnam. Empirical analysis incorporated the China Statistical Yearbook and the Annual Report and Survey of Manufacturing Investment by Taiwanese Firms from the Statistics Department of the Ministry of Economic Affairs.

Questionnaire Administration

From June 2024 to May 2025, online and mail questionnaire surveys were conducted targeting mid-level and senior managers at Taiwanese high-tech parent companies. The questionnaire was anonymous, and data authenticity was ensured. This firm-level survey effectively identifies key factors influencing Taiwanese FDI location decisions and their relative importance.

Basic Demographic Analysis of Returned Samples

A total of 600 questionnaires were sent out (300 to firms invested in China and 300 to those in Vietnam). After three rounds of follow-ups and reminder mailings, 173 questionnaires were returned. After excluding 5 invalid responses (3 from China, 2 from Vietnam), 168 valid samples remained (97 from China, 71 from Vietnam), yielding an overall effective response rate of 28% (32.3% for China, 23.7% for Vietnam). Taiwanese researchers often face the challenge of low response rates in business surveys due to their specific nature and characteristics [65]. Although the response rate was low, the sample holds relatively high representativeness among well-known companies, which may help enhance the validity of the survey and the effectiveness of subsequent analysis [4].

Basic Structural Analysis of Sample Firms (See Table 3).

Table 3: Basic Structure Analysis of Sample Firms

Characteristic Variable	Category	Frequency	Percentage	Cumulative Percentage
Investment Location	China	97	57.7%	57.7%
	Vietnam	71	42.3%	100.0%
Industry Category	Information Technology & Computers	42	25.0%	25.0%
	Semiconductors	39	23.2%	48.2%
	Optoelectronics	24	14.3%	62.5%
	Mobile Communications	18	10.7%	73.2%
	Biotechnology	15	8.9%	82.1%
	Machinery/Panels/Other	30	17.9%	100.0%
Firm Size	Small-Scale (≤200 employees)	58	34.5%	34.5%
	Medium-Scale (201-500 employees)	62	36.9%	71.4%
	Large-Scale (>500 employees)	48	28.6%	100.0%
Capitalization	< 100 million NTD	46	27.4%	27.4%
	≥ 100 million NTD	122	72.6%	100.0%
Investment Amount	≤ 30 million NTD	38	22.6%	22.6%
	30.01 - 50 million NTD	52	31.0%	53.6%
	> 50 million NTD	78	46.4%	100.0%
Entry Mode	Wholly-Owned New Factory	142	84.5%	84.5%
	Joint Venture	18	10.7%	95.2%
	Acquisition of Existing Factory	8	4.8%	100.0%
Job Level	Senior Manager (Chairman/CEO/President)	31	18.5%	

	Mid-Level Manager (Manager/Deputy Manager/Plant Manager)	137	81.5%	
Education Level	University/College	64	38.1%	
	Graduate School or Above	104	61.9%	
Work Tenure	≤ 10 years	72	42.9%	
	11 - 20 years	68	40.5%	
	> 20 years	28	16.6%	
Age	31 - 40 years old	48	28.6%	
	41 - 50 years old	78	46.4%	
	51 - 60 years old	36	21.4%	
	> 60 years old	6	3.6%	

Note: Categorization for Capitalization and Investment Amount is based on standards from Taiwan's Small and Medium Enterprise Administration, Ministry of Economic Affairs.

The key structural characteristics are described below: a. Investment Location and Industry Concentration

- China Group Industry Distribution (n = 97) : Semiconductor: 32, Information Technology/Computers: 26, Optoelectronics: 18, Other: 21. The semiconductor industry accounted for 33.0% (32/97), reflecting the trend of technology-intensive industries having a deep presence in China.
- Vietnam Group Industry Distribution (n = 71) : Information Technology/Computers: 16, Mobile Communications: 14, Biotechnology: 12, Other: 29. Consumer electronics end-products (Mobile Communications + Biotechnology) accounted for 36.6% (26/71), aligning with a cost-oriented positioning. b. Differences in Capital Intensity
- China Group; High Registered Capital (≥ NTD 100 million) proportion: 82.5% (80/97); High Investment Amount (> USD 50 million) proportion: 63.9% (62/97).
- Vietnam Group: High Registered Capital (≥ NTD 100 million) proportion: 59.2% (42/71); High Investment Amount (> NTD 50 million) proportion: 22.5% (16/71). This validates the model of "capital-intensive investment in China versus asset-light expansion in Vietnam" ($\chi^2 = 18.37$, $p < .001$). c. Decision-Maker Characteristics
- Positive Correlation between Education Level and Investment Scale: Decision-makers with a postgraduate degree or higher led 73.1% (57/78) of investments exceeding NTD 50 million.
- Senior Managers' Inclination towards China Investment: Among those with >20 years of work experience, 82.1% (23/28) were responsible for operations in China.

Structural Representativeness Assessment (a) Industry Coverage (See Table 4).

Table 4: Industry Coverage Comparison

Industry Sector	Distribution of Taiwan Listed & OTC Companies	Distribution of Study Sample	Variance
Semiconductors	28.5%	23.2%	-5.3%
Electronic Components	35.2%	39.3%	+4.1%
Others	36.3%	37.5%	+1.2%

Source: Taiwan Stock Exchange 2022 Statistics.

Note: The sample distribution shows minor variance from the population, indicating generally representative industry coverage.

Scale Structure Comparison

- Actual Distribution in Taiwan's High-Tech Industry: Small-scale 42%, Medium-scale 38%, Large-scale 20%.
- Sample Distribution in this Study: Small-scale 34.5%, Medium-scale 36.9%, Large-scale 28.6%.
- Bias Correction: After weighting adjustment, the representativeness error for large-scale companies is < 3.2%.

External Validity Indicators

- Industry Coverage Index: 0.87 (> 0.80 standard).
- Scale Representativeness Error: 2.8% (Acceptable range < 5%).

Conclusion

The sample demonstrates population representativeness in terms of industry distribution, scale structure, and investment modes (ICI > 0.85). Although the semiconductor industry sample is slightly lower, weighting adjustment will be applied during analysis. The characteristics of the management respondents reflect a high degree of professionalism in Taiwanese overseas investment decision-making (61.9% hold a graduate degree or above), enhancing the validity of the research.

Data Analysis Methods

Following the collection of 168 valid questionnaires, the following analytical methods were employed: Initially, non-response bias, reliability/validity analysis (EFA), and analysis of variance (ANOVA) were conducted. Subsequently, conditional logistic regression served as the core analytical tool. The selection of methods emphasized alignment with the "OLI-TT" theoretical framework and paid particular attention to measurement techniques for complex variables such as cultural distance. Hair, et al. provide contemporary standards and operational guidelines for advanced statistical methods,

including exploratory factor analysis and logistic regression. Their authoritative work ensures the methodological rigor of this study's quantitative analyses, such as reliability and validity tests and assessments of model fit.

Regarding model fit testing, a synergistic approach utilizing both the Hosmer-Lemeshow test and the KMO statistic, among others, was adopted to avoid over-reliance on single indicators like the significance p-value. Concurrently, methodological limitations will be objectively discussed, and suggestions for improvement will be proposed. This demonstrates the research rigor and provides methodological references for subsequent studies. The analysis was performed using statistical software packages including SPSS, STATA, and R.

Quantitative Analysis Methods (See Table 5).

Table 5: Quantitative Analysis Methods

Analysis Objective	Analytical Method	Core Test Indicators / Statistics	Software Tool
Non-response Bias Test	Time Trend Extrapolation Independent Samples t-test Chi-square Test	t-value (1), χ^2 value Cohen's d effect size	R 4.2
Variable Structure Exploration	Exploratory Factor Analysis (EFA)	KMO Measure, Bartlett's χ^2 Eigenvalue >1 Criterion	SPSS 22
Reliability & Validity Test	Reliability Analysis	Cronbach's α Coefficient (2)	JASP 0.16
Group Difference Comparison	Analysis of Variance (ANOVA)	F Statistic (3), η^2 Effect Size Tukey HSD Post Hoc Test	SPSS 22
Investment Location Prediction	Binary Logistic Regression (4)	Odds Ratio (OR) (5) Hosmer-Lemeshow Test Nagelkerke R^2 (6)	STATA 17

Note: The core of the methodology can be represented by the following formulas:

1. Independent Samples t-test (for continuous variables):

$$t = \frac{\dot{X}_e - \dot{X}_l}{\sqrt{\left(\frac{s_e^2}{n_e} + \frac{s_l^2}{n_l}\right)}} \quad (1)$$

Note: $\bar{X}$ = mean, s = standard deviation, n = sample size, e = early respondent group, l = late respondent group.

2. Cronbach's α Reliability:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\Sigma_{i=1}^{k}\sigma_{yi}^2}{\sigma_x^2}\right) \quad (2)$$

Note: k = number of items, σ^2_{yi} = variance of item i, σ^2_x = variance of the total score.

3. ANOVA F-statistic:

$$F = \frac{MS_B}{MS_W} = \frac{Ss_B/(k-1)}{Ss_W/(N-k)} \quad (3)$$

Note: SSB = Sum of Squares Between groups, SSW = Sum of Squares Within groups, k = number of groups, N = total sample size.

4. Binary Logistic Regression Model:

$$\log it(P) = in\left(\frac{P(Y=1)}{1-P(Y=1)}\right)\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \varepsilon \quad (4)$$

Note: P(Y=1) is the probability of choosing Vietnam, β_0 is the intercept, β_1, β_2..., β_k are the regression coefficients for the independent variables, X_1, X_2..., X_k are the independent variables, ε is the error term.

5. Odds Ratio (OR):

$$OR_k = e^{\beta k} \quad (5)$$

6. Nagelkerke R^2:

$$R_N^2 = \frac{1-\exp\left(-\frac{2}{n}(LL_{model} - LL_0)\right)}{1-\exp\left(-\frac{2}{n}LL_0\right)} \quad (6)$$

Note: LL = Log-Likelihood value, LL_m = log-likelihood of the model, LL_0 = log-likelihood of the null model, n = sample size.

Data and Methodology Summary (A) Research Design and Sample a. Sample Selection

- Population: Taiwanese listed and over-the-counter (OTC) high-tech manufacturing companies.
- Sampling Method: Stratified random sampling (stratified by industry sector and revenue scale).
- Valid Sample: 168 companies (97 with FDI in China, 71 with FDI in Vietnam).
- Time Frame: Companies undertaking FDI between 2013 and 2021.

Data Collection Procedure

- Survey Instrument: A structured questionnaire designed based on the integrated "OLI-TT" framework, utilizing a 7-point Likert scale. b. Data Collection Execution Process (See Table 6).

Table 6: Data Collection Execution Process

Phase	Content
Pilot Test	Apr 2024 – May 2024. Conducted with 5 companies; items were revised (Cronbach's α > 0.85).
Formal Survey	Jun 2024 – May 2025. Implemented via mixed-mode (mail and online questionnaires).

Follow-up	Three rounds of reminders via telephone and communications software. Achieved an effective response rate of 28% (168 valid responses out of 600 questionnaires dispatched).

Respondent Qualifications
- Restricted to mid- to senior-level executives of the companies (CEOs/General Managers: 21.4%; Plant Managers/R&D Directors: 78.6%).
- Average industry experience: 15.3 years (SD = 6.7).

Analytical Methods
- Core Model: Conditional Logit Model.
- Estimation Method: Maximum Likelihood Estimation.
- Statistical Tests:

Multicollinearity: Variance Inflation Factor (VIF). The average VIF was 1.82 (range: 1.12–2.43). The criterion VIF < 5 is acceptable.

Model Fit: Hosmer-Lemeshow Test. The result (p = .324) indicated good fit. (c) Explanatory Power: Nagelkerke R^2 = .68, indicating the model explains 68% of the variance.

Research Ethics and Rigor
- Approved by the [Name of] Professor Review Committee / Institutional Review Board.
- Informed consent forms were signed, and data were anonymized.

Model Specification and Variable Description
To establish the investment decision Logit function for this research.

Model Specification
This study primarily employs a binary logistic regression model to analyze the factors influencing Taiwanese firms' investment location choices. The dependent variable is the investment location (China = 0, Vietnam = 1). The independent variables consist of 14 standardized continuous variables, including firm size, investment experience, cost factors, and market factors, to facilitate coefficient comparison.

Model fit was assessed using the -2 Log Likelihood, Nagelkerke R^2, and the Hosmer-Lemeshow test. Predictive performance was measured by the classification accuracy rate.

Furthermore, supplementary statistical methods included:
- Analysis of Variance (ANOVA): Used to test for differences in decision factors across different groups.
- Exploratory Factor Analysis (EFA): Used to validate the variable constructs/dimensions.
- Reliability Analysis: Cronbach's α was used to ensure questionnaire consistency.

Model Specification and Variable Description
A binary logistic regression model was employed to analyze the factors influencing Taiwanese firms' choice of Vietnam (relative to China). The model is specified as follows:
- Dependent Variable: Investment location, a binary variable (China = 0; Vietnam = 1).
- Independent Variables: A total of 14 decision factors (constructs), all measured using a 7-point Likert scale.
- Variable Measurement: The scores for all independent variable constructs were derived from multiple questionnaire items (using means or sums). Descriptive statistics (means, standard deviations) for these variables and percentage distributions for categorical variables are provided to facilitate the subsequent conditional logistic regression analysis.

Empirical Analysis
Data Analysis and Results
First, non-response bias analysis was conducted on the 168 valid samples to ensure data representativeness. Subsequently, Exploratory Factor Analysis (EFA) and reliability analysis were used to verify the scale's construct validity and reliability, with particular attention paid to testing multidimensional constructs like technology transfer.

The analysis employed binary logistic regression, which aligns with the nature of the dependent variable "Investment Location (China/Vietnam)." Analysis of Variance (ANOVA) was used to compare differences in investment decision factors between the two locations, directly addressing the core research questions. The presentation of results will focus on empirical findings, such as the direction of cost factors' influence on location choice, objectively presenting statistical results and linking them to hypothesis testing, thereby providing an empirical basis for firm-level research on technology transfer.

Data Analysis Methods
This study employed the following five statistical methods for data analysis

Non-response Bias Test
To ensure sample representativeness, the time trend extrapolation method was used to compare differences in key variables between early and late respondents. Independent samples t-tests showed no significant differences (p > .05), confirming no substantial bias.

Scale Reliability Analysis
Cronbach's α coefficient was used to test the internal consistency of the scales. The α values for all variables ranged from .78 to .91, exceeding the .70 threshold, indicating high scale reliability.

Exploratory Factor Analysis (EFA)
To verify construct validity, principal component analysis with varimax rotation was used for factor extraction. Results showed a KMO value of .92, and Bartlett's test of sphericity was significant (p < .001), confirming the data's suitability for EFA.

Analysis of Variance (ANOVA)
ANOVA was conducted to compare differences in key variables between the group investing in China (n=97) and the group investing in Vietnam (n=71). Effect sizes (η^2) and post-hoc tests were calculated.

Logistic Regression Analysis
To identify key factors influencing investment location choice,

a binary logistic regression model was used for analysis. Odds ratios (OR), model fit (Hosmer-Lemeshow test), and explanatory power (Nagelkerke R^2) were calculated to test the research hypotheses.

Descriptive Statistics and Pearson Correlation Analysis

Descriptive statistics include the means (M), standard deviations (SD), minimums, and maximums for the dependent and independent variables. The dependent variable is location choice, a categorical variable represented as a binary dummy variable. The independent variables are continuous variables, all measured using a 7-point Likert scale.

Descriptive Statistics and Pearson Correlation Matrix

Descriptive statistics for each variable are presented in Table 7, and the Pearson correlation matrix is shown in Table 8.

Table 7: Descriptive Statistics for All Variables

Variable	M	SD	Skewness	Kurtosis	Min	Max
Firm Size	4.05	1.39	-0.21	0.32	1.00	7.00
Investment Experience	5.27	1.00	0.05	-0.12	3.00	7.00
Cost Factors	4.93	1.10	-0.34	0.18	2.00	7.00
Market Factors	5.15	0.95	-0.22	0.41	3.00	7.00
Investment Incentives	4.87	1.21	-0.18	-0.05	2.00	7.00
Cultural Distance	4.26	1.35	0.12	-0.33	1.00	7.00
Infrastructure	5.02	0.89	-0.41	0.27	3.00	7.00
Agglomeration Effects	4.78	1.07	-0.09	-0.21	2.00	7.00
Investment Risk	4.35	1.28	0.31	-0.45	1.00	7.00
Human Resources Performance	5.33	0.96	-0.27	0.15	3.00	7.00
Product/Process Performance	5.11	0.85	-0.15	0.08	3.00	7.00
Market Competition Performance	5.22	0.91	-0.32	0.22	3.00	7.00
Demand-side Motivation	4.95	1.03	-0.11	-0.18	2.00	7.00
Supply-side Motivation	4.88	0.97	0.08	-0.12	2.00	7.00

Note:

- All variables were measured using a 7-point Likert scale.
- Firm Size was measured by standardized number of employees (natural logarithm applied).
- Cultural Distance and Investment Risk are reverse-scored: a higher score indicates better cultural adaptation / lower perceived risk.

Table 8: Descriptive Statistics and Pearson Correlation Matrix (N = 168)

Variable	M	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12
Firm Size	4.05	1.39	1.00	7.00	-											
Investment Experience	5.27	1.00	3.00	7.00	.15*	-										
Cost Factors	4.93	1.10	2.00	7.00	-.08	.12	-									
Market Factors	5.15	0.95	3.00	7.00	.21**	.23**	.17*	-								
Investment Incentives	4.87	1.21	2.00	7.00	.11	.29**	.18*	.32**	-							
Cultural Distance	4.26	1.35	1.00	7.00	-.14*	.05	.25**	.12	.19*	-						
Infrastructure	5.02	0.89	3.00	7.00	.19*	.31**	.22**	.35**	.42**	.16*	-					
Agglomeration Effects	4.78	1.07	2.00	7.00	.13	.24**	.15*	.27**	.37**	.09	.45**	-				
Investment Risk	4.35	1.28	1.00	7.00	-.09	.18*	.33**	.14*	.25**	.38**	.27**	.21**	-			
Human Resources Performance	5.33	0.96	3.00	7.00	.17*	.41**	.19*	.30**	.28**	.07	.39**	.32**	.24**	-		
Product/Process Performance	5.11	0.85	3.00	7.00	.12	.35**	.14	.26**	.31**	.11	.36**	.29**	.19*	.52**	-	
Market Competition Performance	5.22	0.91	3.00	7.00	.20**	.38**	.17*	.33**	.34**	.13	.42**	.35**	.26**	.48**	.55**	-
Demand-side Motivation	4.95	1.03	2.00	7.00	.09	.27**	.20**	.22**	.25**	.15*	.28**	.24**	.18*	.36**	.41**	.39**
Supply-side Motivation	4.88	0.97	2.00	7.00	.16*	.30**	.16*	.25**	.29**	.10	.31**	.27**	.20**	.44**	.47**	.42**

Note: Pearson correlation coefficients are shown below the diagonal. Diagonal elements are omitted as a variable's correlation with itself is 1.
*p < .05, **p < .01 (two-tailed test).

Key Findings from Descriptive Statistics and Pearson Correlation Matrix a. Data Characteristics

- The mean values for all variables ranged between 4.26 and 5.33 (on a 7-point scale), indicating generally positive overall evaluations.
- Cost Factors (M=4.93) and Cultural Distance (M=4.26) showed the greatest variability (SD > 1.10), reflecting divergent assessments among Taiwanese firms regarding costs and cultural adaptation in the two locations.
- The absolute values of skewness were all less than 0.5, and the absolute values of kurtosis were less than 0.7, meeting the assumptions of normal distribution. b. Significant Correlation Clusters

Technology Transfer Performance showed moderate to high intercorrelations:
Human Resources Performance, Product/Process Performance, and Market Competition Performance were moderately to highly correlated with each other (r = .48 to .55, p < .01), verifying the systemic nature of technology transfer.

Location Advantage Combination:
Investment Incentives, Infrastructure, and Agglomeration Effects were interrelated (r = .37 to .45, p < .01), indicating synergistic effects within the policy environment.

Risk Compensation Mechanism:
Cost Factors were positively correlated with Investment Risk (r = .33, p < .01), supporting an investment pattern of "higher risk, higher return." c. Evidence for Hypothesis Predictions

- Investment Experience was positively correlated with Human Resources Performance (r = .41, p < .01), echoing the connection between H2 and H10.
- Cultural Distance was positively correlated with Investment Risk (r = .38, p < .01), providing an empirical basis for H6 and H9.
- Market Factors were correlated with Investment Incentives (r = .32, p < .01), explaining the covariance relationship between H4 and H5.

The correlation matrix indicates moderate correlations (r > .40) among the technology transfer variables (H10-H12). Subsequent regression analysis will need to examine Variance Inflation Factors (VIF) to rule out multicollinearity issues. All correlation coefficients have absolute values below .60, indicating discriminant validity among the variables.

Reliability Analysis and Validity Analysis (EFA)
Scale Reliability Analysis
The results of the scale reliability analysis are presented in Table 9.

Table 9: Internal Consistency Reliability Analysis Results for All Scales (N = 168)

Construct	Items	M	SD	Cronbach's α	95% CI	Corrected Item-Total Correlation Range	Cronbach's α if Item Deleted Range
Investment Experience	2	5.27	1.00	.82	[.76, .87]	.68 - .74	--
Cost Factors	4	4.93	1.10	.79	[.73, .84]	.61 - .72	.75 - .78
Market Factors	5	5.15	0.95	.88	[.85, .91]	.65 - .81	.86 - .88
Investment Incentives	5	4.87	1.21	.91	[.88, .93]	.73 - .85	.89 - .91
Infrastructure	5	5.02	0.89	.86	[.82, .89]	.62 - .79	.83 - .86
Agglomeration Effects	3	4.78	1.07	.78	[.72, .83]	.58 - .71	.70 - .76
Investment Risk	3	4.35	1.28	.81	[.76, .86]	.63 - .73	.75 - .79
Human Resources Performance	3	5.33	0.96	.84	[.80, .88]	.67 - .76	.79 - .82
Product/ Process Performance	3	5.11	0.85	.87	[.84, .90]	.71 - .80	.82 - .86

Market Competition Performance	3	5.22	0.91	.89	[.86, .92]	.75 - .83	.85 - .88
Demand-side Motivation	3	4.95	1.03	.80	[.75, .85]	.60 - .72	.74 - .78
Supply-side Motivation	3	4.88	0.97	.83	[.79, .87]	.65 - .75	.78 - .81

Note:

- All scales used a 7-point Likert scale.
- The 'Firm Size' construct was measured by employee number classification, and the 'Cultural Distance' construct was a single-item scale; therefore, neither was included in the reliability analysis.
- Rationale for Item Retention: To examine the internal consistency reliability of each scale, this study conducted Cronbach's α analysis and inspected the corrected item-total correlations and the change in α if an item was deleted. The results (shown in Table 9) indicate that the Cronbach's α values for all constructs ranged from .78 to .91, all exceeding the acceptable standard of .70. Furthermore, all corrected item-total correlations were greater than .50. Additionally, deleting any item did not result in an increase in the α coefficient for its respective construct. Accordingly, all items were retained, demonstrating that all scales possess good internal consistency reliability.

Interpretation of Key Indicators from Reliability Analysis Results a. Reliability Levels Excellent Reliability (α ≥ .85):
Market Factors, Investment Incentives, Product/Process Performance, Market Competition Performance.

Good Reliability (.70 ≤ α < .85): The remaining 8 scales.
All scale α coefficients were > .78, exceeding the acceptable standard (.70). b. Item Analysis

Corrected Item-Total Correlation Range:
.58 ~ .85 (all met the >.50 criterion). (b) Item Deletion Analysis indicated no need to remove any items (deleting any item did not result in a higher α coefficient than the original). c.

Lowest Performing Items:

- **Agglomeration Effects:** "Proximity to companies in complementary industries" (r = .58).
- **Demand-side Motivation:** "Need for assistance from specific customers" (r = .60). c. Cross-Construct Comparison
- **Most Stable Scales:** Investment Incentives (α = .91) and Market Competition Performance (α = .89).
- **Most Sensitive Scales:** Cost Factors (α = .79) and Agglomeration Effects (α = .78), reflecting the complexity of these constructs. d.

Conclusions and Recommendations from Reliability Analysis
Conclusion: All scales demonstrated good to excellent internal consistency (Cronbach's α = .78 ~ .91), meeting psychometric standards and supporting the validity of subsequent analyses.
Recommendations

- **Agglomeration Effects Scale:** Although reliability met the standard (α = .78), future research could consider adding items (e.g., efficiency of information flow within the industrial cluster).
- **Cross-Cultural Applicability**: The item "low transportation costs" in the Cost Factors scale showed a higher standard deviation (SD = 1.45) within the Vietnam sample, indicating influences from geographical differences.

Validity Analysis
Exploratory Factor Analysis (EFA) was conducted to validate the questionnaire's construct validity, simplify the variable structure, and verify the scale's construct validity. The questionnaire contained multiple constructs, each with several items. a. Exploratory Factor Analysis (EFA)

Results: Promax Oblique Rotation The factor structure matrix after Promax oblique rotation is presented in Table 10. (N=168, Number of Items=44, Kaiser-Meyer-Olkin Measure of Sampling Adequacy KMO=.92, Bartlett's Test of Sphericity p < .001).

Table 10: Exploratory Factor Analysis Structure Matrix (N = 168) (Promax Oblique Rotation, k = 4)

Item	Factor 1 Cost Efficiency	Factor 2 Market Drive	Factor 3 Technology Transfer	Factor 4 Risk Management	Highest Cross-Loading	Commun ality
Cost Factors Low-Cost Labor	.83	.12	-.05	.08	.11	.72

High-Skilled Labor	.79	.21	.13	-.04	.18	.68
Raw Material Costs	.76	.18	.09	.13	.16	.64
Transportation Costs	.71	.15	-.11	.22	.19	.60
Market Factors Market Growth	.18	.88	.14	.07	.10	.82
Demand Growth	.22	.85	.09	.12	.13	.78
Market Entry Speed	.14	.81	.21	-.03	.17	.73
Technology Transfer Technology Reception	.05	.13	.91	.08	.07	.85
Local Adaptation	.11	.09	.89	.12	.11	.83
Skill Enhancement	.17	.16	.78	.04	.15	.69
Risk Management Policy	.09	.07	.12	.86	.13	.78
Continuity Social Stability	.13	.11	.08	.82	.09	.71
Security Level	.21	-.04	.05	.79	.17	.68
Factor Correlation Matrix						
Factor 1	1.00					
Factor 2	-.32*	1.00				
Factor 3	.28*	.19	1.00			
Factor 4	-.41**	.35**	.07	1.00		

Note: **p < .01, *p < .05.

Correspondence between EFA Results and Research Hypotheses

The EFA extracted four core factors, which reconceptualized and simplified the original 14 constructs. The total variance explained was 68.4%, falling within the acceptable range (typically >60%). The correspondence is detailed in Table 11.

Table 11: Correspondence between EFA Results and Research Hypotheses

EFA Extracted Factor	Corresponding Original Hypothesis	Explanation
Factor 1: Cost Efficiency	H3 (Cost Factors)	Groups "high-skilled labor" with other cost items, indicating Taiwanese firms assess labor "cost-performance ratio" as an integrated factor.
Factor 2: Market Drive	H4 (Market Factors)	Composed purely of market-related items, confirming market attractiveness as an independent and crucial dimension.

Factor 3: Technology Transfer	H10 (Human Resources Performance) H13 (Demand-side Motivation) H14 (Supply-side Motivation)	This factor presents a significant point of discussion. It merges items theoretically belonging to "motivation" (H13, H14) and "performance" (H10), such as technology reception, local adaptation, and skill enhancement.
Factor 4: Risk	H9 (Investment Risk)	Composed purely of risk-related items, validating risk as an independent inhibitory dimension.

Management

As shown in Table 11, a key challenge in the correspondence between the EFA results and the original hypotheses lies with Factor 3 (Technology Transfer), which empirically forms a hybrid construct. It combines items from theoretically distinct dimensions of "motivation" (H13, H14) and "performance" (H10). This suggests that in practical decision-making, firms may perceive technology transfer as a continuous, inseparable dynamic process spanning from initial motivation to final performance outcomes.

Hypotheses not directly represented in the EFA: H1 (Firm Size), H2 (Investment Experience), H5 (Investment Incentives), H6 (Cultural Distance), H7 (Infrastructure), H8 (Agglomeration Effects), H11 (Product/ Process Performance), H12 (Market Competition Performance). These variables might not have been included in this specific EFA due to item design (e.g., single-item measures for some) or other methodological reasons.

Construct Validity Assessment

Overall, this EFA result indicates that the questionnaire possesses good construct validity, although one theoretical validity issue requires attention.

Convergent Validity: Excellent

- The standardized factor loadings of all items on their respective factors (.71 to .91) were significantly higher than the .50 threshold.
- The communalities (.60 to .85) were all higher than the .50 standard, indicating that the variance of each item is effectively explained by its assigned factor.

Discriminant Validity: Good

The cross-loadings (next highest loadings) of each item on non-assigned factors were all below .25, well under the .40 cautionary threshold. This indicates sufficient distinguishing power between the factors.

Theoretical Validity

The primary concern lies in the structure of the "Technology Transfer" factor. The empirical results do not align with the theoretical expectation in your "OLI-TT" framework, which posits a separation between "motivation" and "performance". This suggests that respondents indeed perceive technology transfer as a holistic concept when responding. d. Conclusion

The EFA successfully extracted four meaningful and statistically robust factors, laying a solid foundation for subsequent analysis.

Factor Correlations

The factors exhibited significant but not excessively high correlations ($|r| < .5$), indicating they measure distinct yet related concepts. This supports the appropriateness of using Promax oblique rotation.

- Cost Efficiency and Risk Management showed a negative correlation ($r = -.41$, $p < .01$).
- Market Drive and Risk Management showed a positive correlation ($r = .35$, $p < .01$).
- Technology Transfer and Cost Efficiency showed a weak positive correlation ($r = .28$, $p < .05$).

Validity Indicators

- All item factor loadings were > .70, ranging from .71 to .91, far exceeding the .50 threshold.
- Communalities ranged from .60 to .85 (all above the .40 standard).
- Discriminant Validity: The square roots of the AVE for each factor were > .85, exceeding the inter-factor correlations.

Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) was conducted to examine differences in key variables across different groups.

ANOVA Results

Please see Table 12 (Analysis of Differences in Decision Factors by Investment Location) and Table 13 (Multiple Group Comparison of Technology Transfer Efficacy by Firm Size).

Table 12: Analysis of Differences in Decision Factors by Investment Location (China vs. Vietnam): Independent Samples One-Way ANOVA

Decision Factor	Chin (n=97)	Vietnam (n=71)	F(1, 166)	p	η^2	95% CI	Post-Hoc Test
Cost Factors	4.52 (0.95)	5.47 (0.89)	48.73	<.001	.227	[0.68,1.22]	Vietnam > China ***
Market Factors	5.82 (0.73)	4.25 (0.82)	210.15	<.001	.559	[1.42,1.72]	China > Vietnam ***
Cultural Distance	3.95 (1.18)	4.71 (1.41)	16.28	<.001	.089	[0.36,1.16]	Vietnam > China ***
Investment Risk	3.87 (1.05)	5.02 (1.12)	54.92	<.001	.249	[0.86,1.44]	Vietnam > China ***
Infrastructure	5.41 (0.76)	4.48 (0.85)	67.35	<.001	.289	[0.71,1.15]	China > Vietnam ***
Tech. Transfer Efficacy	5.08 (0.79)	5.64 (0.82)	22.17	<.001	.118	[0.29,0.83]	Vietnam > China ***

Note:

- M (Mean), SD (Standard Deviation), η^2 (effect size).
- *** $p < .001$.
- Technology Transfer Efficacy = mean of (Human Resources Performance + Product/Process Performance + Market Competition Performance).
- Non-significant variables not listed: Investment Experience, Agglomeration Effects, Policy Motivation (all $p > .05$).
- Significance Level: All post-hoc test results are marked as ***, indicating $p < .001$, meaning these differences are highly statistically significant (i.e., the differences are highly unlikely to be due to random error).

The post-hoc test results clearly show investor assessment differences between China and Vietnam:

China holds advantages in Market and Infrastructure, whereas Vietnam is more favored for Cost and Technology Transfer Efficacy, albeit accompanied by higher Cultural Distance and Investment Risk. This information assists decision-makers in selecting the appropriate location based on investment objectives (e.g., cost-orientation vs. market-orientation).

Table 13: Multiple Group Comparison of Technology Transfer Efficacy by Firm Size (One-Way ANOVA with Tukey HSD Post-Hoc Test)

Size Group	Small-Scale (n=58)	Medium-Scale (n=62)	Large-Scale (n=48)	F (2,165)	p	η^2	Post-Hoc Test
Human Resources Performance	4.87 (0.82)	5.38 (0.76)	5.72 (0.68)	24.35	<.001	.228	L > M; L > S; M > S
Process Performance	4.92 (0.79)	5.25 (0.73)	5.41 (0.71)	8.76	<.001	.096	L> S **; M> S *
Market Performance	4.95 (0.85)	5.31 (0.78)	5.63 (0.75)	15.28	<.001	.156	L> M; L > S **; M > S *

Note:

- M (Mean), SD (Standard Deviation), η^2 (effect size).
- Size group criteria: a. Small-scale: Employees ≤ 200, b. Medium-scale: 201-500 employees, c. Large-scale: >500 employees.
- *$p < .05$, **$p < .01$, ***$p < .001$. (S=Small, M=Medium, L=Large)

A clear conclusion can be drawn from the post-hoc test results: larger firm size is associated with higher efficacy across all aspects of technology transfer (human resources, process, market). This indicates that scale is likely a key driver for successful technology transfer.

Interpretation of Key ANOVA Results

Core Findings on Location Differences

Vietnam's Advantages: Significant advantages were found in Cost Factors ($\Delta M = 0.95$) and Investment Risk ($\Delta M = 1.15$), both with large effect sizes ($\eta^2 = .227, > .22$), supporting the cost-avoidance motivation behind the "China Plus One" strategy. (b)

China's Advantages

The significant advantages in Market Factors ($\Delta M = 1.57$, $\eta^2 = .56$) and Infrastructure ($\Delta M = 0.93$, $\eta^2 = .29$), with very large and large effect sizes respectively, validate the persistence of market-seeking investment in China.

Pattern of Scale Effect

Human Resources Performance Large firms (M = 5.72) scored significantly higher than small and medium firms (F = 24.35, η^2 = .228, large effect), reflecting the principles of resource dependence theory.

Diminishing Marginal Returns

The differences between groups were smallest for Process Performance (η^2 = .096, medium effect), suggesting a ceiling effect in technology diffusion.

Conclusions from ANOVA (Practical Implications)

Vietnam's advantages in cost and risk control (η^2 = .227, large effect) confirm its suitability as an alternative production base. However, China's market size effect (η^2 = .56, very large effect) remains irreplaceable. It is recommended that Taiwanese firms adopt a dual-hub strategy:

- High-tech products: Market-oriented production in China.
- Standardized products: Cost-oriented production in Vietnam.

Model Fit Analysis

Model fit was assessed using the Hosmer-Lemeshow test. The result for the model in this study was non-significant (p = .324). This indicates that the theoretical model demonstrates a good fit with the actual questionnaire data and can appropriately explain the observed outcomes.

- **Interpretation:** A non-significant result (p > .05) in the Hosmer-Lemeshow test is desirable, as it suggests no significant discrepancy between the predicted probabilities from the model and the observed outcomes in the data. This supports the goodness-of-fit of the logistic regression model.
- **Complementary Metrics:** Alongside the Hosmer-Lemeshow test, other indicators such as the -2 Log Likelihood, Nagelkerke R^2 (.68), and the overall model significance χ^2 (14) = 178.94, p < .001 collectively confirm the model's robustness and explanatory power.

Research Hypothesis Testing: Conditional Logistic Regression Analysis

The Conditional Logit Model (CLM), developed by McFadden, is used to model choices from a discrete set of alternatives, making it suitable for analyzing location selection decisions [66]. This study employed a binary logistic regression model for analysis, with the investment location (China = 0, Vietnam = 1) as the dependent variable and 14 constructs based on the eclectic paradigm and technology transfer perspective as independent variables.

Regarding variable operationalization, each theoretical construct was validated through multiple measurement items and summarized using mean values or principal component scores. This approach ensured that the variables effectively reflected differences in the investment environments between China and Vietnam. Through this regression model, the 14 research hypotheses were systematically tested to identify the key factors influencing Taiwanese firms' investment location decisions and to provide a predictive basis for investment site selection in the high-tech industry.

Multicollinearity Diagnostics

To address potential multicollinearity in the logistic regression analysis, this study conducted diagnostics using the Variance Inflation Factor (VIF), with results presented in Table 14.

Table 14: Multicollinearity Diagnostic Results

Variable	VIF	Tolerance
Firm Size	1.12	0.89
Investment Experience	1.43	0.70
Cost Factors	1.87	0.53
Market Factors	2.15	0.47
Investment Incentives	1.95	0.51
Cultural Distance	1.28	0.78
Infrastructure	2.43	0.41
Agglomeration Effects	1.76	0.57
Investment Risk	1.82	0.55
Human Resource Performance	2.21	0.45
Product/Process Performance	1.93	0.52
Market Competition Performance	2.08	0.48
Demand-Side Motivation	1.65	0.61
Supply-Side Motivation	1.59	0.63

Diagnostic Criteria

- VIF > 10: Severe multicollinearity
- Tolerance < 0.1: Multicollinearity problems (c) Condition Index > 30

Dimensional multicollinearity

Results Interpretation

The VIF values for all variables were below 3.0, and tolerance values were all above 0.4. This indicates the absence of severe multicollinearity problems among the variables, confirming their suitability for the subsequent logistic regression analysis. These diagnostic results demonstrate the methodological rigor of the study and ensure the credibility of the subsequent analytical findings.

Conditional Logit Model Results

Conditional Logit Model Analysis Results

The overall model fit indices include -2 Log Likelihood, Nagelkerke R^2, Chi-square test (χ^2 with degrees of freedom, df), and Hosmer-Lemeshow test. The table contains regression coefficients (β), standard errors (SE), Wald statistics, significance p-values, Odds Ratios (OR), and 95% confidence intervals [95% CI].

Table 15: Conditional Logit Model Analysis Results (N = 168)

Predictor Variable	β	SE	Wald χ^2	p	Odds Ratio [95% CI]
H1 Firm Size	0.42	0.18	5.44	0.020	1.52 [1.07, 2.16]
H2 Investment Exp	1.07	0.29	13.62	<0.001	2.91 [1.65, 5.14]

H3 Cost Factors	-0.89	0.22	16.38	<0.001	0.41 [0.27, 0.63]
H4 Market Factors	0.96	0.25	14.75	<0.001	2.61 [1.60, 4.26]
H5 Investment Inc	0.83	0.21	15.63	<0.001	2.29 [1.52, 3.46]
H6 Cultural Dist	-1.12	0.31	13.05	<0.001	0.33 [0.18, 0.60]
H7 Infrastructure	0.75	0.19	15.58	<0.001	2.12 [1.46, 3.08]
H8 Agglomeration	0.68	0.17	16.00	<0.001	1.97 [1.41, 2.76]
H9 Investment Risk	-1.05	0.27	15.12	<0.001	0.35 [0.21, 0.59]
H10 HR Performance	0.91	0.24	14.37	<0.001	2.48 [1.55, 3.98]
H11 Process Perf	0.79	0.20	15.60	<0.001	2.20 [1.48, 3.27]
H12 Market Perf	0.85	0.23	13.65	<0.001	2.34 [1.49, 3.67]
H13 Demand-side	0.62	0.18	11.88	0.001	1.86 [1.31, 2.64]
H14 Supply-side	0.57	0.16	12.66	<0.001	1.77 [1.29, 2.42]
Constant	-2.18	0.75	8.44	0.004	0.11 [0.03, 0.48]

Note:
Overall Model Fit Indices:
-2 Log Likelihood = 152.36
Hosmer-Lemeshow Test: p = 0.324
Nagelkerke R^2 = 0.68
Model $\chi^2(14) = 178.94$, $p < .001$

Interpretation of Analysis Results
Hypothesis Support Direction: All 14 hypotheses (H1-H14) are fully supported.

- Positive Influences (H1, H2, H4, H5, H7, H8, H10-H14): Coefficients are positive and OR > 1 ($p < .001$).
- Negative Influences (H3, H6, H9): Coefficients are negative and OR < 1 ($p < .001$).

Key Findings from the Analysis Results
Strongest Inhibiting Factors

- **Cultural Distance (OR = 0.33):** This corresponds to a 67% reduction in the odds (1 - 0.33 = 0.67) of choosing a location. OR < 1 ($p < .001$) confirms cultural distance is an inhibiting factor.
- **Investment Risk (OR = 0.35):** This corresponds to a 65% reduction in the odds (1 - 0.35 = 0.65) of choosing a location. OR < 1 ($p < .001$) confirms investment risk is an inhibiting factor.

Strongest Facilitating Factors

- Investment Experience (OR = 2.91): This corresponds to a 191% increase in the odds (2.91 - 1 = 1.91) of choosing a location. OR > 1 ($p < .001$) confirms investment experience is a facilitating factor.
- Market Factors (OR = 2.61): This corresponds to a 161% increase in the odds (2.61 - 1 = 1.61) of choosing a location. OR > 1 ($p < .001$) confirms market factors are a facilitating factor.

Model Explanatory Power

- Nagelkerke R^2 = .68 indicates the model explains 68% of the variance in investment location, which is higher than the common standard in social sciences (0.30).
- The overall model is significant (χ^2 (14) = 178.94, $p < .001$).

These results verify that under the "China Plus One" strategy, Taiwanese investment decisions in China and Vietnam are simultaneously influenced by both traditional location advantages (cost, market) and technology transfer performance (human resources, process performance), while risk aversion tendencies (cultural distance, policy risk) serve as key inhibiting factors.

Managerial Implications from the Conditional Logit Model Results When a firm exhibit high-cost sensitivity (score > 5.0) AND is non-market oriented (score < 4.5) OR has high technology transfer needs (score > 5.3), the expected benefit of choosing Vietnam is significantly higher than choosing China (OR > 2.29).

Empirical Results and Discussion
Results and Analysis of the 14 Hypothesis Tests
Results of the 14 Hypothesis Tests
The raw data were analyzed using a conditional logit model. The support for each hypothesis was determined based on the sign and statistical significance of the regression coefficient. The results are summarized in Table 16.

H1: Firm size has a positive influence on Taiwanese FDI location choice in China and Vietnam.
The result supports the hypothesis. Statistical evidence: $\beta = 0.42$, OR = 1.52, $p = .020$, 95% CI [1.07, 2.16]. The testing logic for Hypotheses 2 through 14 follows this pattern.

Table 16: Summary of 14 Hypothesis Test Results (N=168)

Hypothesis	Predicted Relationship	Test Result	Statistical Evidence
H1: Firm Size->Investment Decision	Positive (+)	Supported	□ =0.42, OR=1.52, p= .020, 95% CI [1.07,2.16]
H2: Investment Experience ->Investment Decision	Positive (+)	Supported	□ = 1.07, OR= 2.91, p< .001, 95% CI [1.65,5.14]

H3: Cost Factors->Investment Decision	Negative (-)	Supported	□ = -0.89, OR= 0.41, p< .001, 95% CI [0.27,0.63]
H4: Market Factors-> Investment Decision	Positive (+)	Supported	□ = 0.96, OR= 2.61, p< .001, 95% CI [1.60,4.26]
H5: Investment Incentives->Investment Decision	Positive (+)	Supported	□ = 0.83, OR= 2.29, p< .001, 95% CI [1.52,3.46]
H6: Cultural Distance->Investment Decision	Negative (-)	Supported	□ = -1.12, OR= 0.33, p< .001, 95% CI [0.18,0.60]
H7:Infrastructure->Investment Decision	Positive (+)	Supported	□ = 0.75, OR= 2.12, p< .001, 95% CI [1.46,3.08]
H8: Agglomeration Effects->Investment Decision	Positive (+)	Supported	□ = 0.68, OR= 1.97, p< .001, 95% CI [1.41,2.76]
H9: Investment Risk->Investment Decision	Negative (-)	Supported	□= -1.05, OR= 0.35, p< .001, 95% CI [0.21,0.59]
H10: Human Resources Performance->Investment Decision	Positive (+)	Supported	□ = 0.91, OR= 2.48, p< .001, 95% CI [1.55,3.98]
H11: Product/ Process Performance->Investment Decision	Positive (+)	Supported	□= 0.79, OR= 2.20, p< .001, 95% CI [1.48,3.27]
H12: Market Competition Performance->Investment Decision	Positive (+)	Supported	□= 0.85, OR= 2.34, p< .001, 95% CI [1.49,3.67]
H13: Demand-side Motivation->Investment Decision	Positive (+)	Supported	□= 0.62, OR= 1.86, p= .001, 95% CI [1.31,2.64]
H14: Supply-side Motivation->Investment Decision	Positive (+)	Supported	□= 0.57, OR= 1.77, p< .001, 95% CI [1.29,2.42]

Note: All hypotheses were statistically significant ($p < .05$).
Overall Model Fit Indices:
-2 Log Likelihood = 152.36
Hosmer-Lemeshow Test: $p = .324$
Nagelkerke $R^2 = .68$
Model χ^2 (14) = 178.94, $p < .001$

Analysis and Discussion of Research Results The analysis of the research results is as follows.
Comprehensive Support for Hypotheses

- All 14 hypotheses received statistically significant support ($p < .05$), indicating that the "OLI-TT" framework effectively explains Taiwanese investment decisions in China and Vietnam.
- All independent variables aligned with the predicted directions, reflecting a systematic pattern in Taiwanese investment behavior (see Table 16).
- Facilitating Factors (Positive): Investment Experience (OR = 2.91) and Market Factors (OR = 2.61) had the strongest effects.
- Inhibiting Factors (Negative): Cultural Distance (OR = 0.33) and Investment Risk (OR = 0.35) had the most significant negative impacts. b. Core Decision-Making Mechanisms

Risk Aversion Dominance

The strong negative influence of Cultural Distance (H6) and Investment Risk (H9) (reducing the odds of investment by 67% and 65%, respectively) reflects Taiwanese firms' high sensitivity to socio-political stability, verifying the risk-diversification nature of the "China Plus One" strategy. (b) Criticality of Technology Transfer:

The high OR values for Human Resources Performance (H10) and Process Performance (H11) (OR > 2.20, large effect) indicate that technology localization capability is a core consideration in location selection, supporting the technology transfer perspective.

Policy Implications

- Vietnam's advantages lie in significantly lower Cost Factors (H3) and Investment Risk (H9) coefficients, but it needs to enhance its Infrastructure (H7) to maintain attractiveness.
- China's advantages lie in Market Factors (H4) and Agglomeration Effects (H8), but the negative effect of Cultural Distance (H6) highlights localization challenges. c. Model Efficacy
- Nagelkerke $R^2 = .68$ indicates the model explains 68% of the variance in investment decisions, demonstrating high predictive validity.
- The confidence intervals for all Odds Ratios (OR) do not include 1, supporting the robustness of the coefficient estimates.

Conclusions and Implications

When Taiwanese firms adopt the "China Plus One" strategy, they simultaneously weigh traditional location-specific advantages (cost, market) against technology transfer performance (human resources, process performance), with risk aversion (cultural distance, policy risk) serving as a pivotal decision-making hinge. These results also provide an empirical basis for applying the "OLI-TT" framework in emerging economies.

Table 17: Key Predictive Factors and Influence Ranking

Influence Direction	Variable	Regression Coefficient (β)	OddsRatio (OR)	Substantive Impact Interpretation
Positive	Investment	1.07***	2.91	Increases odds of choosing Vietnam by 191%
Drivers	Experience Market Factors	0.96***	2.61	Increases odds of choosing Vietnam by 161%
	Tech. Transfer Demand-side	0.62**	1.86	Increases odds of choosing Vietnam by 86%
Negative	Cultural	-1.12***	0.33	Decreases odds of choosing Vietnam by 67%
Inhibitors	Distance Investment Risk	-1.05***	0.35	Decreases odds of choosing Vietnam by 65%

Note: ***p < .001; **p < .01; Effect Size Calculation: (OR - 1) × 100%.*

Synthesizing the data analysis results above, the empirical findings include the following four key points:

- All 14 hypotheses received statistically significant support (*p* < .05). The support for all 14 hypotheses in this study, while relatively uncommon in social science research, indicates a well-constructed theoretical framework and the objective presentation of results. This demonstrates the "OLI-TT" framework's effectiveness in explaining Taiwanese investment decisions in China and Vietnam.
- All independent variables aligned with the predicted directions, reflecting a systematic pattern in Taiwanese investment behavior. Among these, Cultural Distance (OR = 0.33) and Investment Risk (OR = 0.35) were the strongest inhibiting factors, while Investment Experience (OR = 2.91) and Market Factors (OR = 2.61) were the strongest facilitating factors.
- Technology performance variables explained 32.7% of the variance in location choice decisions ($\Delta R^2 = .327$, $p < .001$).

"OLI-TT" Model Validation

- Model Fit Test: The Hosmer-Lemeshow test result ($p = .324 > .05$) confirms a good model fit.
- Explanatory Power Analysis: Nagelkerke $R^2 = .68$ is significantly higher than the common standard in social sciences (> .30).
- Overall Significance: χ^2 (14) = 178.94, $p < .001$. This indicates that the theoretical model aligns well with the actual questionnaire data and can appropriately explain the real-world situation.
- This study integrated the Eclectic Paradigm and technology transfer perspectives to construct a dynamic "OLI-TT" integrated framework. Using this framework, it empirically dissected the FDI decisions of Taiwanese high-tech industries regarding China and Vietnam under the "China Plus One" strategy. Through an in-depth survey of 168 companies, it systematically analyzed the interactive mechanisms between technology transfer efficacy and location selection, thereby providing key management insights for the era of supply chain restructuring. It concurrently validates the strategic wisdom of the ancient Chinese proverb, "A fine bird chooses a tree to nest in" – excellent companies must carefully plan their production locations to seek sustainable development.

Emergence of a Dual-Track Decision-Making Mechanism

China: Domestic Market Dependence and Deep Cultivation

Research indicates that Taiwanese firms invested in China generally have a longer operational history (mostly established between 2000-2010). Their decision-making highly prioritizes local market growth, demand, and purchasing power. The strategic core focuses on expanding or maintaining market share. Technology transfer also primarily serves local production and market needs, reflecting a strategy of dependence on and deep cultivation of China's vast domestic market.

Vietnam: Cost and Export-Oriented Hub

In contrast, Taiwanese investment in Vietnam occurred later (mostly post-2015) and is clearly driven by factors such as low-cost labor, raw materials, and land. Development goals are highly concentrated on product export, primarily targeting markets outside China (e.g., Europe and America). This reflects Vietnam's role as an export-oriented hub under the "China Plus One" strategy, aimed at diversifying production bases, reducing costs, and mitigating supply chain risks. Technology transfer here focuses more on meeting the quality requirements and efficiency needs of export products.

Parallel Dual-Track Investment Strategy

Taiwanese firms are not simply relocating from China to Vietnam. Instead, they are implementing a parallel dual-track investment strategy: "deep cultivation in China" alongside "cost-effective export orientation in Vietnam." Firms configure the most suitable locations based on their own resources, product characteristics, and target markets, rather than engaging in simple capacity transfer. Focusing on the perspective of Taiwanese firms, Chen and Wei examine the critical trade-offs among costs, market access, and risks under the "China Plus One" strategy [67]. Their empirical analysis provides a direct reference for this study in constructing the dual-track decision-making mechanism, which contrasts "deep cultivation in the Chinese market" with "efficiency-seeking export production in Vietnam."

Paradigm Shift in Technology Transfer

From Unidirectional Output to Bidirectional Interaction

Traditionally, technology transfer was often viewed as a unidirectional knowledge flow from parent company to subsidiary. However, this study finds that supply-side factors of technology transfer (e.g., accessing skilled local talent, leveraging local

scientific infrastructure or proprietary knowledge) are valued in both China and Vietnam. This indicates that knowledge resources in the host country of overseas subsidiaries are beginning to play an active role, with technology transfer gradually shifting towards bidirectional interaction and learning [68-70].

Enhanced Localization and Adaptive Capacity

Among the demand-side factors for technology transfer, "the need to access foreign markets and respond to local demand" or "the need to respond to specific local market demands to enhance corporate capability" received considerable agreement, particularly in the Chinese market. This shows that technology transfer is not merely about replicating the parent company's model; overseas subsidiaries increasingly need the capacity to adapt technologies to local market characteristics, regulatory environments, and customer needs. The paradigm is shifting from standardization to localization and adaptation [71-76].

Diversification of Performance Evaluation

The evaluation of technology transfer performance is no longer limited to traditional product/process performance (e.g., reduced defect rates, increased self-production ratio) and market competition performance (e.g., cost reduction, increased profitability). The importance of "human resources performance" is highlighted, particularly the indicator that "employees can modify technology based on local needs," which is seen as crucial for technology rooting and enhancing long-term competitiveness.

Theoretical Breakthroughs and Extensions

Dynamic Evolution of the OLI Framework

This study validates that O (Ownership-specific advantages: e.g., investment experience), L (Location-specific advantages: market potential, cost factors, policy environment, agglomeration effects, infrastructure, risk, etc.), and I (Internalization-specific advantages: e.g., risk control) remain the core determinants of Taiwanese FDI decisions [77]. However, under the "China Plus One" context, the weighting and substance of L (Location advantages) have changed significantly: China's strengths lie in market size and mature industrial clusters, whereas Vietnam's advantages are in cost factors and policy incentives [78,79].

Integration of the New "OLI-TT" Framework

This study systematically incorporates the demand-side (market-driven, localization needs), supply-side (host country talent, knowledge resources), and performance aspects (human resources, process, market) of Technology Transfer (TT) into the analytical framework. This deepens the OLI framework's ability to explain the dynamic process of knowledge flows and subsidiary capability building.

Technology transfer not only embodies I advantages (internalization) but also feeds back to strengthen O advantages (enhanced subsidiary technological capability) and L advantages (improved operational efficiency and adaptability in the local context).

Theoretical Implications of "China Plus One"

The results support the view that "China Plus One" is not merely a risk diversification strategy but also a proactive layout and functional specialization based on the dynamic evolution of OLI advantages. Taiwanese firms, by leveraging the distinct advantage profiles of different locations (L), matching them with their own core strengths (O), and utilizing internalization advantages (I) and technology transfer (TT) efficacy, achieve overall value chain optimization (e.g., China focuses on market, Vietnam focuses on cost-sensitive manufacturing and export). This challenges the oversimplified "substitution" narrative, emphasizing the complex strategic connotation of "complementarity" and "functional specialization."

Key Factors Assessment Matrix for Taiwanese High-Tech Industry FDI in China and Vietnam

Integrating the empirical results of the 14 hypotheses and referencing Hofstede's cultural dimensions model and the World Bank's Logistics Performance Index, an FDI Key Factors Assessment Matrix was constructed (see Table 18).

Table 18: Key Factors Assessment Matrix for Taiwanese High-Tech Industry FDI in China and Vietnam (N = 168)

Dimension	Key Factor	Direction	Odds Ratio(OR) [95% CI]	Weight	Operationalized Indicators & Thresholds
Ownership	H1:Firm Size	+	1.52* [1.07, 2.16]	8%	Annual Revenue > USD$500 Million
Advantages	H2:Investment Experience	+	2.91*** [1.65,5.14]	22%	Local Operation Years ≥ 5 Years
Location	H3:Cost Factors	–	0.41*** [0.27,0.63]	15%	Total Cost ≤ 80% of China's Benchmark
Advantages	H4:Market Factors	+	2.61*** [1.60,4.26]	18%	Market Growth Rate ≥ 8%
	H5:Ixznvestment Incentives	+	2.29*** [1.52,3.46]	12%	Tax Incentives ≥ 20%
	H6:Cultural Distance	–	0.33*** [0.18,0.60]	6%	Cultural Difference Index ≤2.5/6
	H7:Infrastructure	+	2.12*** [1.46,3.08]	9%	LPI Index ≥ 3.5/5
	H8:Agglomeration Effects	+	1.97*** [1.41,2.76]	7%	Industrial Cluster Completeness ≥ 70%

Internalization Advantages	H9:Investment Risk	–	0.35*** [0.21, 0.59]	6%	Political Risk Rating ≥ BBB
Technology Transfer	H10: Human Resources Performance	+	2.48*** [1.55, 3.98]	10%	Technology Localization Capability ≥ 80%
	H11: Process Performance	+	2.20*** [1.48, 3.27]	8%	Defect Rate Reduction ≥ 15%
	H12: Market Competition Performance	+	2.34*** [1.49, 3.67]	7%	Unit Cost Reduction ≥ 10%
	H13: R&D Demand-side	+	1.86** [1.31, 2.64]	5%	Localized R&D Projects ≥ 3 Items/Year
	H14: R&D Supply-side	+	1.77*** [1.29, 2.42]	5%	Industry-Academia Partners ≥ 2

Note:

- Cultural Difference Index is calculated using Hofstede's six-dimension model (sum of absolute differences, range 0-6).
- Significance Level: *p < .05, **p < .01, ***p < .001 (two-tailed test). (3) Weights can be adjusted based on industry characteristics; calculated comprehensively based on standardized coefficients (β) and OR values (Σ Weight = 100%).

Operational Guidelines

Scoring: Each factor is scored 0-10 points.

- **Positive Factors:** Score 8 points for meeting the threshold; add 1 point for every 10% performance above the threshold.
- **Negative Factors:** Score 8 points for meeting the threshold; subtract 1 point for every 10% performance below the threshold.

Decision

- Investment Feasibility Threshold: Weighted Total Score ≥ 7.5.
- High-Risk Veto Condition: Re-evaluate if H6 or H9 score < 5.0.

Strategic Weight Adjustment

- China Market-Oriented Strategy: H4 (+5%), H8 (+3%), H3 (-5%)
- Vietnam Manufacturing-Oriented Strategy: H3 (+5%), H5 (+3%), H4 (-5%)

Practical Recommendations

Strategic Guidance for Firms

To effectively implement the dual-track investment strategy in China and Vietnam, Taiwanese firms can follow these management implications:

- Clear Strategic Positioning: Define China as the "Market and R&D Base" and Vietnam as the "High-Efficiency Manufacturing Base" to form a complementary structure.
- In-Depth Assessment: Systematically evaluate the supply chain integrity, infrastructure (especially transport, energy, and communications in Vietnam), maturity of specific industry clusters, availability and skills of local talent, and policy continuity and execution efficiency in both locations.
- Adaptive Technology Transfer: Design flexible technology transfer schemes tailored to different locations. In China, focus on market-oriented product adaptation and regulatory compliance technology. In Vietnam, emphasize process efficiency enhancement and quality control.
- Establish Local Knowledge Absorption Mechanisms: Proactively identify and utilize knowledge resources and talent pools in the subsidiary's location (particularly in emerging industrial parks or local industry-academia-research institutions in Vietnam), fostering bidirectional technology exchange and innovation.
- Dynamic Risk Monitoring and Management: Continuously monitor the political and economic situations, policy changes (e.g., China's regulatory environment, adjustments to Vietnam's investment incentives), and geopolitical risks in both regions.

Develop contingency plans in advance.

Policy Recommendations for Local Governments

For China

- Enhance Policy Transparency and Consistency: Stabilize law and regulation enforcement to reduce foreign investors' concerns regarding policy uncertainty.
- Strengthen R&D Support and Talent Development: Provide better R&D subsidies, cultivate high-level technical and managerial talent (especially in advanced technology and management), and enhance intellectual property protection measures.
- Optimize the Business Environment: Simplify administrative procedures and ensure the principle of fair competition to foster a healthy business ecosystem.

For Vietnam

- Accelerate Infrastructure Development: Prioritize improvements in transportation and logistics networks (ports, roads, railways), ensure stable power supply, and enhance the quality and coverage of communication networks.
- Improve Administrative Efficiency and Transparency: Streamline administrative processes, enhance the work efficiency of government departments, and strengthen the transparency and consistency of law enforcement.
- Deepen Industry-Academia Collaboration: Expand the scale of cultivating high-quality technical and managerial talent, strengthen the vocational training system's linkage with industry needs, and promote collaboration between universities, research institutions, and foreign-invested

companies.
- Complete the Industrial Ecosystem: For key targeted high-tech industries (e.g., semiconductors, electronics), actively attract upstream and downstream suppliers and service providers to strengthen industrial cluster effects.
- Ensure Stability of Preferential Policies: Carefully assess and maintain the stability and long-term nature of internationally competitive investment incentive policies (e.g., tax exemptions/reductions) to bolster foreign investors' confidence in long-term commitments.

Research Limitations and Future Research Recommendations

Research Limitations

Sample Representativeness
- The survey respondents were primarily mid-level managers from the semiconductor, information technology/computer, and optoelectronics industries. It did not adequately cover other high-tech sub-sectors (e.g., biotechnology, machinery) or top-level decision-makers.
- While analyzing the high-tech industry as a whole allows for the identification of a common decision-making framework, it does not delve into the differences among sub-sectors. Variations in technological characteristics, supply chain structures, and capital intensity across different sub-industries may lead to differences in the weighting and sensitivity of various factors within the "OLI-TT" framework. This represents a potential direction for future research.

Methodological Limitations
- The cross-sectional survey design makes it difficult to capture dynamic evolutionary processes. Furthermore, self-reported data can be influenced by subjective perceptions.
- The empirical findings reveal that technology transfer in real-world investment decisions is a dynamic process where motivation and performance are closely intertwined, providing new insights for theory.

Insufficient Depth of Variables
- The measurement of complex constructs, such as cultural distance and technology transfer, could be further deepened and refined.

Geographical Focus
- The study focused solely on comparing China and Vietnam, without including other locations such as India or other ASEAN member states.

Future Research Recommendations

Extension of Research Topics
- Expand "China Plus One" location comparisons to analyze Taiwanese investment patterns in other regions (e.g., India, ASEAN).
- Quantify the impact of geopolitics: Analyze the specific effects of risks such as the US-China trade war and regional security concerns on supply chain restructuring.
- Explore the role of digital transformation: Investigate how AI and automation are changing location selection criteria and the nature of technology transfer.
- Conduct "comparative case studies across industries" or incorporate "industry type" as a moderating variable in multi-group analysis to test the applicability of the "OLI-TT" model across different industrial contexts.

Methodological Refinements
- Develop dynamic models: Track the long-term strategic adjustments of subsidiaries to establish causal models.
- Combine qualitative and quantitative methods: Use in-depth case interviews alongside surveys to gain deeper insights into decision-making logic and technology transfer barriers.
- Incorporate multi-level analysis: Consider contextual variables such as industry characteristics and firm size.

Establish a Supply Chain Intelligence Platform
- Integrate global intelligence: Provide real-time information on regulations, risks, and infrastructure.
- Facilitate experience sharing: Establish a mechanism for sharing case studies on supply chain configuration and technology transfer.
- Create communication channels: Aggregate policy information and develop an international talent database.

Concluding Remarks

This study proposes a dynamic "OLI-TT" integrated framework to analyze the decision-making dynamics of Taiwanese high-tech firms implementing a "China Plus One" strategy, maintaining a dual-track presence in both China and Vietnam. The conclusions not only deepen theoretical understanding but also provide empirical guidance for corporate strategy and government policy. By overcoming current limitations and continuing to explore emerging issues, future research can better assist Taiwanese firms in building more resilient global competitive advantages amidst the ongoing wave of supply chain restructuring.

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