

# The Empirical Study of Location-related Factors on Sourcing Strategy of Multinationals in China

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**Abstract:** Based on literature review, this paper empirical analyzes the location factors of sourcing by Multinationals in China by using the survey data. The results from our survey show that policies, exchange rate, tariff and non-tariff trade barriers, China's attractiveness as a market and potential of supply market have a significant impact on the extent of sourcing in China; The factor, local infrastructure, is not notable. And the result is explained at last.

**Keywords:** Multinationals, Sourcing in China, Location factors

## I. Introduction

Before the eighties, sourcing has not caused widespread concern by scholars. But now sourcing problem becomes more and more prominent. This is because many multinationals are dependent on sourcing through the international supply network in order to gain a strategic advantage, and therefore sourcing strategy becomes key points for successful globalization of multinationals. Since 1990s, China which has a vast market and other opportunities attracts investment by multinationals. With the increasing investment in China, multinationals have to adjust their sourcing strategy. However, what location factors will attract multinationals' sourcing in China becomes the focus of scholars' attention.

Basing on existing research (Carter and Vickery, 1989<sup>[1]</sup>; Swamidass and Kotabe, 1993<sup>[2]</sup>; Murray, Wildt, and Kotabe, 1995<sup>[3]</sup>; Crone and Watts, 2003<sup>[4]</sup>; Byrne, 2005<sup>[5]</sup>) results at home and abroad the analysis found, location factors of sourcing strategy mainly focused on cost, local infrastructure, exchange rates, tariff and non-tariff trade barriers, China's attractiveness as a market, the local supply market potential, and so on. However, scholars were only concerned about one or more aspects of the impact of these factors. And many studies did not even take host country's government policy into account. And studies have been largely developed countries as the background, because of China's institutional context and different raw materials and spare parts market, empirical research findings from abroad is applicable to China worth exploring.

Domestic scholars who study on the issue of sourcing are rare. Mao Yunshi<sup>[6]</sup> had adopted case study method to explore this issue, and pointed out that multinationals' own strategies, domestic and international economic environment,

industry characteristics, technology and other factors affect multinational corporations' sourcing strategy in China. And this study will use empirical research methods to only explore these location factors in detail.

## II. Hypothesis and Research Models

### Hypothesis

Caddick and Dale's<sup>[7]</sup> studies have shown that the policy environment is one of the factors which must be considered when sourcing from undeveloped countries. China is an undeveloped countries with many policies need to be improved, especially for multinationals' sourcing. If Chinese Government give some preferential policies such as taxation to support and encourage multinationals' sourcing in China and this will facilitate them to improve the extent of sourcing in China. So this study made the following assumption:

Hypothesis 1: The better policy environment is, the higher extent of sourcing in China by multinationals is.

Exchange rate has an important impact on the sourcing location of multinationals<sup>[2]</sup>. As the fluctuation of exchange rate will bring about operation risk, and import raw materials and component costs will change (Kotabe and Murry, 2004<sup>[8]</sup>), and therefore multinationals tend to sourcing in China. Thus,

Hypothesis 2: The more fluctuant exchange rate is, the higher extent of sourcing in China by multinationals is.

To protect the local enterprises, host government often takes some protectionist measures, such as tariffs, import quotas, non-tariff barriers and transfer of government-controlled sensitive technologies. So multinationals often increase sourcing in the host country to penetrate local markets<sup>[3]</sup>. Therefore, this study makes the following assumption:

Hypothesis 3: Tariff and non-tariff trade barriers and the extent of sourcing in China by multinationals have a positive correlation.

Local infrastructure includes laws and regulations, transportation facilities and communication facilities (including Internet) and so on, which restricted the possibility and cost of multinational corporations' sourcing. Martin Fraering and Sameer Prasad<sup>[9]</sup> think that good local infrastructure will help multinationals to save costs, thus contributing them to sourcing in the host country.

Hypothesis 4: Good local infrastructure and the extent of sourcing in China by multinationals have a positive

correlation. Sourcing cost include transportation costs, labor costs and raw materials and parts costs. Birou and Fawcett’s <sup>[10]</sup> study has shown that cost is an important factor affecting sourcing level in host country. Swamidass and Kotabe’s <sup>[2]</sup> study found that cost and multinationals’ sourcing in the United States have a significant negative correlation. Therefore, this research hypothesis is as follows:

Hypothesis 5: Higher cost and extent of multinationals’ sourcing in China have a negatively correlation.

Byrne <sup>[5]</sup> study found that many multinationals choose China as a global sourcing center, one of the reasons is that China has a large market. Swamidass and Kotabe’s <sup>[2]</sup> study also shows that multinational corporations prefer to sourcing in those locations which have a market size and growth trends. Therefore, Chinese market capacity and potential impact directly the degree of multinational corporations’ sourcing in China. And thus,

Hypothesis 6: Chinese market attractiveness and the extent of multinationals’ sourcing in China have a positive correlation.

The supply market potential is manifested mainly in the availability of raw materials and spare parts in host country market, the competitiveness of local suppliers and the competitive intensity of supply market <sup>[11]</sup>. Some scholars <sup>[2][10]</sup> pointed out that if multinational companies can obtain cheap, stable, reliable and good quality raw materials and parts from the local markets, it will tend to sourcing locally. Crone and Watts’s<sup>[4]</sup> study also confirmed this point. And further found that the more competitive local suppliers is and the higher intensity of competitive local supply market is, the more likely multinational companies tend to sourcing from local market. Therefore, this study makes the following assumptions:

Hypothesis 7: The potential of supply market and the extent of multinational corporations’ sourcing in China have a positive correlation.

Research Models

The degree of sourcing in China (Y), as the dependent variable, refers to the ratio of procurement of raw materials in China accounted for the total value of the raw materials needed for the production. According to previous theoretical assumptions, set the following forms of linear regression equation:

$$Y = \alpha + \beta_1 X_1 + \varepsilon_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon_i$$
  
(1)

Where  $\alpha$  indicated that the constant term,  $\beta_i$  indicated that the regression coefficients,  $\varepsilon_i$  is a random error. The  $X_i$  ( $i=1,2,\dots,7$ ) as the explanatory variable, were Respectively policies, exchange rates, tariff and non-tariff trade barriers, local infrastructure, cost, China's attractiveness as a market and the local supply market potential.

III. Methodology and Data Analysis

Methodology

This paper re-develops a scale to measure them on the basis of our predecessors (Swamidass and Kotabe, 1993) <sup>[2]</sup>, Crone and Watts, 2003<sup>[4]</sup>, including 21 items, which it is necessary for its validity and reliability testing (Table 1) (KMO=0.771). This shows that the questionnaire has good construct validity.

Table 1. The Cronbach  $\alpha$  of Location Variables

Variables	Item	Cronbach $\alpha$
Location factors		0.8246
The local supply market potential	If your firm were to change suppliers for the non-standardized components in the product, the one-item cost involved in switching from one supplier to another would be	0.8851
	On average, the number of suppliers capable of providing the non-standardized components in the product in China is	
	The number of substitutes in China for the non-standardized components in the product is	
	The competitiveness of suppliers in China relative to suppliers in other countries	
	Decision-makers’ perceptions of the availability, suitability and competitiveness of Chinese suppliers	
Attractiveness of the Chinese market	Short-term (3-yr.) market growth rate	0.8966
	Long term (10-yr) market growth rate	
	The industry which your company belongs to gross margin	
	Current profitability in China	
	Prospects for future profits in China	
Cost	Transportation cost	0.7254
	Labor cost	
	Materials and component cost	

Local infrastructures	Legal and institutional	0.7295
	Transportation facilities (road, rail, and air)	
	Telecommunications (including the Internet)	
Tariffs and non-tariff trade barriers	Trade barriers (including quotas, multinational trade agreements of restrict exports and imports)	0.7411
	Tariff	
Policies	The extent of inspiration of local government	0.7911
	The extent of enjoying tax allowance (i.e. export rebate rate, etc.)	
Exchange Rate	Fluctuation of exchange rate	NA.

Data for this study are from a mailed survey questionnaire and field interviews with a select group of multinationals' officials responsible for sourcing. The survey covers six provinces which are Shanghai, Jiangsu, Zhejiang, Tianjin, Beijing and Guangdong. These six provinces have attracted 60% foreign investment, and thus the sample has strong representation. From the "List of foreign-invested enterprises in China," in the random selection of 1,200 companies conducted a questionnaire survey. Excluding the invalid questionnaires, 109 valid questionnaires were recovered, which reached statistical analysis of the sample size needed.

#### Data Analysis

This study analyzes data with SPSS13.0. The regression model, provided in Table 2, was developed to test our fourteen hypotheses.

Table 2. Multiple Regression Analysis of Test Results

Variable	B	Std.E	Beta	P-value	VIF
Policies	0.271	0.099	0.188	0.007	1.420
Exchange Rate	-0.160	0.070	-0.141	0.024	1.161
Tariffs and non-tariff trade barriers	0.382	0.109	0.229	0.001	1.291
Local infrastructures	0.190	0.110	0.118	0.089	1.478
Cost	-0.359	0.100	-0.234	0.001	1.296
Attractiveness of the Chinese market	0.289	0.118	0.181	0.016	1.684
The local supply market potential	0.362	0.099	0.245	0.000	1.371
Constant	0.705 (0.647)				
Durbin-Watson	1.816				
R <sup>2</sup>	0.672				
Adjusted R <sup>2</sup>	0.646				

B: estimated value; Std. E: standard error

Table 2 shows the assets specificity, entry mode, policies,

exchange rates, tariff and non-tariff trade barriers, cost, China's attractiveness as a market and potential of supply market have significance influence on the extent of sourcing in China ( $P < 0.05$ ). The following equation explicates the specific variables included in the regression mode:

$$Y = 0.705 + 0.271X_1 - 0.160X_2 + 0.382X_3 - 0.359X_5 + 0.289X_6 + 0.362X_7 \quad (2)$$

Namely, policies, exchange rate, tariff and non-tariff trade barriers, China's attractiveness as a market and potential of supply market have positive influence on the extent of sourcing in China; The factor, local infrastructure, is not notable. Thus, using the multiple regression analyses we find support for H1, H2, H3, H5, H6 and H7.

#### IV. Discussion and Future Research

Due to the short number of studies which show empirical evidence about the location factors of multinationals' sourcing in China, the purpose of this paper has been to provide theoretical and empirical evidence which allows us to have a more integrative and homogeneous vision of those location factors which have proved to be the most relevant in the analysis of multinationals' sourcing in China. To do so, 7 factors were selected. And only the factor, local infrastructure has not a significant impact on the extent of sourcing in China, other factors are significant. Although the local infrastructure for multinational corporations in China is not significant with the level of sourcing in China, the perfect laws and regulations, transportation and communication facilities are conducive to promote multinationals' sourcing in China. And this finding partly support Martin Fraering and Sameer Prasad<sup>[9]</sup>'s proposition.

The location factors, such as policies, exchange rate, tariff and non-tariff trade barriers, China's attractiveness as a market and potential of supply market, have positive influence on the extent of sourcing in China. First, Policies will affect the sourcing strategy of multinationals. The study has shown that good policies for multinational companies tend to promote them sourcing in China. Second, because tariffs and non-tariff trade barriers to transnational corporations are often not conducive to import raw materials and spare parts, and thus promote multinational companies tend to sourcing in China. Third, although some economic literatures (Dixit, 1989<sup>[12]</sup>) have found that corporate-level strategy weakens the exchange rate on domestic VS. import sourcing strategy, however, this study finds that the exchange rate fluctuation have significant influence on the degree of sourcing in China. And this is consistent with Kotabe and Murray's (2004)<sup>[8]</sup> findings. Fourth, with regard to cost factors, namely, transportation costs, labor costs and the cost of raw materials and parts, we find that the lower sourcing costs are, the higher level of sourcing in China is. And this is consistent with the reality, many multinational corporations sourcing in China is to reduce costs, access to cost competitive advantage. Finally, China's attractiveness

as a market and potential of supply market both have positive influence on the extent of multinationals' sourcing in China. At present, many multinationals are optimistic about China's huge market before deciding to source in China. And in order to meet local market needs and develop good relationships with the Chinese government, multinational companies increasing the level of sourcing in China become a magic weapon. The study's findings support the Crone and Watts<sup>[4]</sup>'s conclusions.

To conclude, it must be said that this study represents a starting point for future research studies intended to widen theoretical and empirical evidence about sourcing strategy. As a research agenda, we suggest trying to make an in-depth analysis of the factor "localization" which the load factor is only 0.413 (<0.5) in the pre-test has been removed, this may be due to abolition of restrictions about "multinational companies to purchase local raw materials" in recent years. But "localization" has been or continues to affect the sourcing strategy of multinational corporations in Chinas. In addition, a potentially rich area of investigation in the future could concentrate on the key components and common components respectively, because the key components are difficult to obtain and the impact of transnational corporations are considerable, so the risk of obtaining key components is greater than the common parts.

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