# Decision Framework for Localization of Pharmaceutical Manufacture with Applications to Malaysia and Indonesia

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**Summary**: A pharmaceutical company, Global Pharma (fictitious name), has strong presence in the western markets of Europe and the US, where the major manufacturing base is also located.  With the shift in growth from these developed markets to the emerging markets of Asia, Latin America, Eastern Europe and Middle East Africa, there is a resulting increase in transportation of goods and hence cost and carbon footprint. At the same time, the company has opportunities to reduce these costs because localizing manufacturing in emerging markets offers will reduce the transportation costs and the carbon footprint. However, it requires significant investment and long-term planning for a pharmaceutical company to determine the viability to localize its manufacture in emerging markets. Localization is establishing one or more of a company's functions in a country. These functions include and not limited to, manufacturing, research and development, warehousing, and procurement. In this study, we develop a framework to assist a pharmaceutical company in the localization decision-making. In the framework, a comprehensive list of key external factors are obtained and analyzed for their impact on localization in a particular market. Those factors are also grouped into pertinent categories that are arranged into logical levels according to their importance and the degree of the company's control over them. We apply the framework for the localization decisions in Malaysia and Indonesia and the application of this framework infers that the atmosphere in the two countries is positive for localization.

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**KEY DEVELOPMENTS:**

1. Emerging markets provide opportunities for a pharmaceutical company to provide greater access to medicines for broader population.
2. A list of key external factors that influence localization decisions.
3. A qualitative analysis of factors determining their impact.
4. Categorization of factors into pertinent groups.
5. A framework that will use a hierarchal or level approach that will assist in localization decisions.
6. An application of framework to Malaysia and Indonesia.

## Introduction
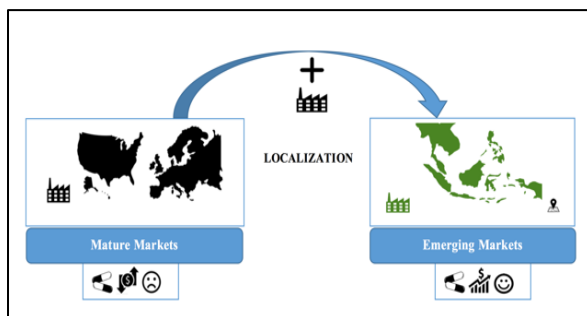


The company, Global Pharma (fictitious name), is a global pharmaceutical products manufacturer with strong emphasis in commercial pharmaceutical products. The company has a strong presence in North America, Europe, and Japan and is establishing a strong presence in the emerging markets. Global Pharma performs extensive research to develop innovative pharmaceuticals to treat ailments for which there are few affordable treatment options. The company is also committed to provide access to affordable healthcare to the broader population. The purpose of this thesis is to develop a framework that will assist Global Pharma in localization decisions. *Localization* is a process in which a company sets up one or more of its functions in a country. These functions can

be manufacturing, research and development, services, purchasing, etc.

## Driving Factors for Localization

The factors that are driving a company to localize are presented below.
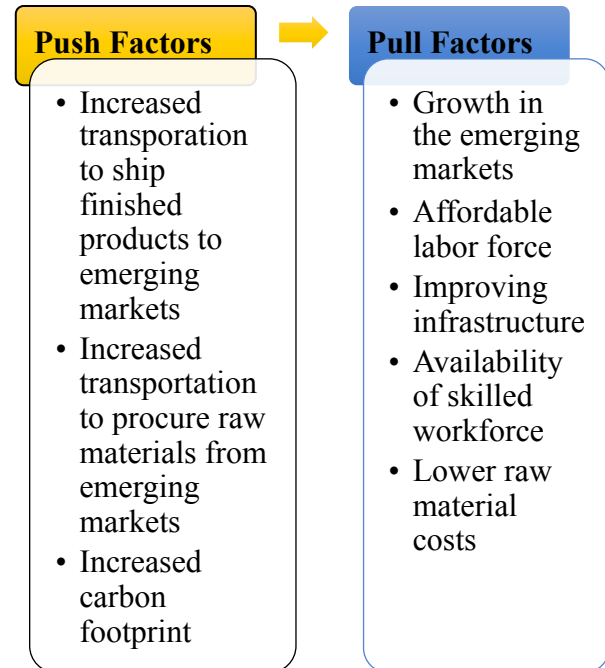


## Research Questions and Scope

This thesis aims to answer the following research questions:

(1) What are the key external factors that influence the localization decisions?
(2) What is the framework that will assist Global Pharma in the localization decision-making?

After a framework that assists in localization decisions is developed, it will be applied to Malaysia and Indonesia.

## Literature Review

Several external factors are identified and they are arranged into following categories:
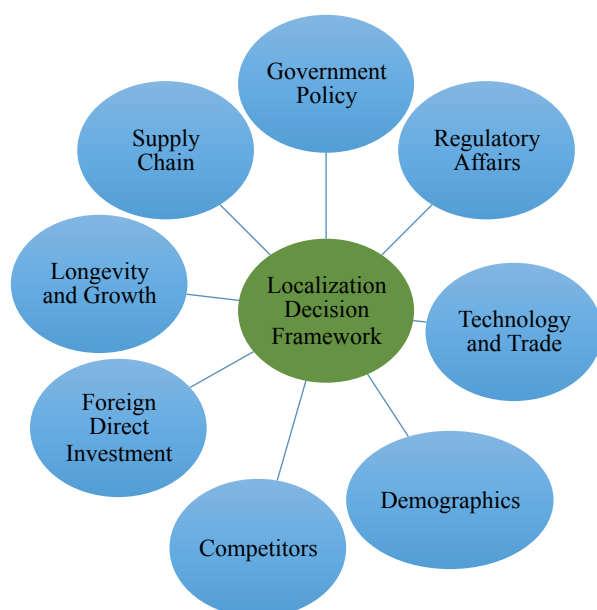
Examples of key factors under each category are presented in the table below.

| Category | Factors |
|---|---|
| Government Policy | Tendering, Tax Incentives, Business Approval Process |
| Regulatory Affairs | Patent Protection, Quality Assurance and Quality Control Requirements, Regulatory Requirements |
| Technology and Trade Policy | Production Technology, Tracking Technology, Trade Policy |
| Demographics | Gross Domestic Product, Population Density, Peoples beliefs in Foreign vs. Local |
| Competitors | Existing Competitors, Competitors' Market Share, Competitors' Growth |
| Foreign Direct Investment | History of Foreign Direct Investment (FDI), atmosphere for FDI. |
| Longevity and Growth | Market Stability, Market Conditions, Market Trends |
| Supply Chain | Infrastructure, Reliable Supplier Network, Customer Expectations |

***Contributions of this thesis:***
(1) A comprehensive list of key factors that influence the localization decisions for the pharmaceutical companies in emerging markets.
(2) Categorization of factors and prioritizing categories.
(3) Identifying the impact of the factors as positive, negative or unknown using literature.
(4) A decision framework that uses categories and impact to support localization decisions.

## Research Method



## Applications of Framework to Malaysia and Indonesia

The following table presents the applications of framework to Malaysia and Indonesia.

A positive impact is assigned when more than 55 percent of the factors have positive impact. An unknown impact is assigned when at least than 25 percent of the factors have an unknown impact and at least 45 percent of the factors have positive impact or at least 35 percent of the factors have unknown impact and only 35 percent of factors have a negative impact. A negative impact is assigned if at least 45 percent of the factors have a negative impact.

| Category | Malaysia | Indonesia |
|---|---|---|
| **Level 1** | | |
| Government Policy | P: 87% (of factors have positive impact) | P: 67% |
| Regulatory Affairs | U: 33% | U: 25% |
| Technology | U: 83% | U: 83% |

| | | |
|---|---|---|
| and Trade | | |
| **Level 2** | | |
| Demographics | U: 33% | U: 40% |
| Competitors | P: 57% | P: 57% |
| **Level 3** | | |
| FDI | P: 100% | U: 50% |
| Longevity and Growth | P: 100% | P: 75% |
| Supply Chain | P: 80% | P: 60% |
| **Notes:** P – Positive, N – Negative, U - Unknown | | |

A category is given a "P" when majority of the factors under that category has a positive impact. A category is given an "N" when majority of the factors under that category has a negative impact. A category is given "U" when majority of the factors, about 55 percent of the factors, are neither positive nor negative. In such cases, the factors with unknown impact will determine the overall impact of that category. Therefore, such categories were given an unknown impact.

Based on the analysis of the categories under Levels 1, 2 and 3 as well as the factors under each category, it can be inferred that Malaysia and Indonesia have a positive atmosphere for localization and it is recommended to localize in Malaysia and Indonesia provided that the internal factors in the company are also supportive. However, significant percentages of factors under Level 1, 2, and 3 have unknown impact on localization, and thus, it is important for Global Pharma to further explore the impact of unknown factors.

**Conclusions**

The decision framework application to Malaysia and Indonesia using external factors indicate that both countries have positive atmosphere to localize. As next steps, Global Pharma should perform the following:

(1) Identify the factors with unknown impact.
(2) Determine the impact of such factors either through market research or through surveys.
(3) Update the impact based on the results from above steps.
(4) Determine if the changes will impact the overall recommendation.

The limitations of this thesis are:

(1) Only external factors are considered.
(2) The study is purely qualitative.