

Evaluating the Development of the North Vietnam's Metropolises

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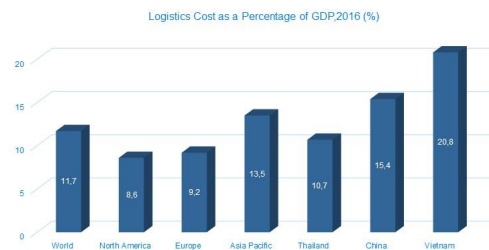
Abstract : Over the last two decades, Vietnam's record on economic growth was remarkable, with a lot of potential to develop, Vietnam's GDP per capita growth has been among the best in the world. City logistics play a crucial role in Vietnam's economy, the more effective these services are the more competitive of the industry and trade of each country is. However, the logistics system in Vietnam is spontaneous and lacking professionalism. This paper aims to analyze Vietnam's economy overview and evaluate the development of logistics in three big cities of Northern Vietnam by using a set of criteria used in the TOPSIS method. As a result of the analysis, the value of C_i^* for storage and transportation is 0.91, which is the highest value in Hanoi.

Key Words : TOPSIS Method, Decision-Making, Logistics Infrastructure, National Economic Development, Northern Vietnam

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About Vietnam's logistics system



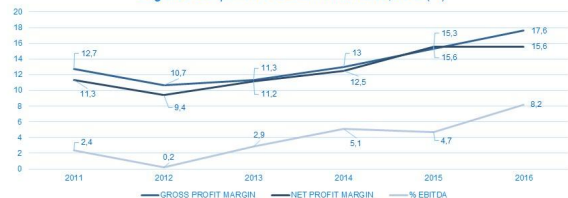
Underdeveloped infrastructures, traffic jams, low productivity
=> Delay of transportation or delivery, clearance time in port for inspection

1. Introduction

About Vietnam economy :

	2013	2014	2015	2016	2017
Population (million)	89.8	90.7	91.7	92.7	93.6
GDP per capita (USD)	1,893	2,029	2,033	2,110	2,355
GDP (USD bn)	170	184	186	196	221
Economic Growth (GDP, annual variation in %)	5.4	6.0	6.7	6.2	6.8
Consumption (annual variation in %)	5.2	6.1	9.3	7.3	-
Investment (annual variation in %)	5.3	9.3	9.4	9.9	-
Exports (USD billion)	133	150	162	177	215
Imports (USD billion)	133	149	166	174	212
Exports (annual variation in %)	16.5	12.6	7.9	9.0	21.6
Imports (annual variation in %)	18.2	12.3	11.3	5.0	21.4

Logistics Companies' Financial Performance, 2016 (%)



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2. Topsis method

Ha Noi

- Capital city
- Population: 7,588,150
- Area: 3,324.92km², including 12 districts, 1 town, and 18 suburban districts.
- Gross regional domestic product (GRDP) increased 9.0 - 9.5% (2016);
- GDP per capita: 75-77 million VND (~ 3,500 USD / person/year)



- TOPSIS (The Technique for Order of Preference by Similarity to Ideal Solution) is a multi-criteria decision analysis method
- Including 7 steps :
 - Step 1: Construct the decision matrix
 - Step 2: Normalize the decision-matrix.
 - Step 3: Calculate the weighted normalized decision matrix
 - Step 4: According to standardized value "vij" of weight to determine the best ideal solution "A+" and the worst ideal solution "A-"
 - Step 5: Calculating distance scale
 - Step 6: Calculate the similarity to the best solution C*

3. Using Topsis in evaluating the logistics systems in Vietnam's major metropolises

Hai Phong

- Major industrial city, port city, second largest city in North Vietnam
- The volume of cargo through the ports reached 80.01 million tons.
- The population: 2,090,788
- Area :1,527 km².
- GDP per capita in 2016 is 3,472USD
- Gross regional development product (GRDP: 105.584 billion VND (2016))



•Based on collected data and equations from (1) to (5), determine the weight "wj" of each index. The weight vector "W" is as follows:

•W= (0.282671, 0.717329, 0.257287, 0.557465, 0.1852475, 0.508381, 0.00411, 0.1523365, 0.213865, 0.325404, 0.280647, 0.164615, 0.06722, 0.168611, 0.246388, 0.753612)

•Calculate normalized weight and establish normalized matrix, according to w hich determine the best ideal solution "A+" and worst ideal solution "A-". "A+" and "A-" are shown as follows:

•A+ = (0.247194329, 0.689241461, 0.243543606, 0.555473875, 0.162877722, 0.508138725, 0.00265348, 0.142910719, 0.110080093, 0.20788866, 0.297160753, 0.261426369, 0.147876291, 0.047271245, 0.137154961, 0.199976501, 0.622301514)

•A- = (0.08004157, 0.132489913, 0.026125428, 0.027638334, 0.021353842, 0.008344887, 0.001978048, 0.026861711, 0.016517681, 0.024192448, 0.004137843, 0.013484935, 0.022802999, 0.016340677, 0.016232023, 0.067657723, 0.051609587)

Quang Ninh

- The only province including 4 cities.
- The province is seen as a miniature Vietnam
- This is a major coal mining province of Vietnam.
- Area : 6,177.8 square kilometers
- Population :1,245,000.
- The gross regional development product in 2016 increase 10,1%
- GDP per capita in 2016 is 3,776USD.



4. Implement and suggestion

This study aims to investigate the main factors for evaluating three metropolises of North Vietnam through previous literature review. Therefore, comparing and ranking these metropolises by using Topsis methodology. Base on result giving some suggestions to develop and improve these major metropolises.

5. Conclusion

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