

## **BENCHMARK OF COUNTRIES' PERFORMANCE IN LOGISTICS: AN APPROACH BASED ON WORLD BANK OPEN DATA**

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**Abstract:** Logistics which can be considered as the science of planning, implementing and controlling the physical flow of materials and goods from point of origin to point of use to meet customer's need at a profit has become very important in recent times that it now plays a vital role in companies' performance as well as the economies of nations. One of the attempts to measure logistics performance at national level is the Logistics Performance Index (LPI) published by the World Bank Group. In fact this study dubbed "Benchmark of countries' performance in Logistics – an approach based on World Bank Open Data" argues that there is a close relationship between global competitiveness level of a country and its logistics performance level. It discusses some types of Logistics and also aims to analyze the logistics competitiveness of some countries from a national competitiveness perspective using World Bank Open Data. This work sought to compare Logistics Performance Index (LPI) of Ghana and its region as well as Hungary and its region. Finally, the work made use of international score card where six key dimensions (thus Customs, Infrastructure, International shipments, logistics competitiveness, Tracking & tracing and Timeliness) are applied to benchmark countries' performance and also display their derived overall LPI index to discuss Logistic Performance of Hungary together with that of Ghana.

**Keywords:** benchmarking, logistics performance, World Bank Open Data, competitiveness, Ghana

### **1. INTRODUCTION**

The word logistics as it sounds was originated from Greek word 'Logistikos' and the Latin word 'Logisticus' which means science of computing & calculating. Moving Armies, their armaments, the supplies of food to the war front in ancient times was used more in connection with "logistics" and it gained importance during World War II in army operations covering the movement of supplies, men and equipment across the border.

Today it has a wider meaning and it is used in the business for the movement of material from suppliers to the manufacturer and finally the finished goods to the consumers. Logistics is defined by Philip Kotler as "Planning, implementing and controlling the physical flow of materials and finished goods from point of origin to point of use to meet customer's need at a profit."

Companies are today facing increasing levels of competitive pressure and difficulty with respect to maintaining and improving profitability. The management of these companies are being forced to seek and implement innovative strategies with which to advance their company's competitive advantage as well as their profitability and these circumstances and the increasingly complex nature of logistics operations, are causing companies, such as those in the manufacturing sector, to focus on their core competencies,

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while others provide, for example, some or many of their logistics activities. Companies are also increasingly coming to realize the importance and role of logistics in their organization and therefore there is the need for specialist input.

As said above on the role and importance of logistics, it is important to note the key role and impact of logistics in the company, on its sustainability, competitiveness and profitability, as well as in the economy of a country. Furthermore, as companies find themselves under growing pressure from both customers and shareholders to seek ways in which to decrease their costs while at the same time increasing performance, they are forced to find ways in which they may improve the efficiency and effectiveness of their operations. These pressures are increasingly impacting the way in companies, and their customers [1]. Logistics is playing more and more important role in company performance, in particular for companies seeking to increase their competitive advantage and corporate profitability.

It can be said that companies with a competitive advantage enjoy a position of enduring superiority over competitors, in terms of customer preference, which may be achieved through logistics. The source of competitive advantage is in the ability of the organization to differentiate itself, in the eyes of the customer, and to operate at a lower cost, and therefore a greater profit than its competitors. According to Christopher (1998) competitive advantage stems from the many discrete activities a company performs in designing, producing, marketing, delivering, and supporting its products. Companies thus gain competitive advantage by performing such strategically important activities more efficiently than their competitors [2]. The specialization and expertise of a contractor may well provide the company with further competitive advantage in this regard. In the same way that companies seek a competitive advantage over other companies, so too do countries seek to promote their exports by influencing the value of their currency, subsidizing certain sectors of their economy, for example by promoting efficiencies in economically important activities such as those involved in the logistics arena. Improved and efficient logistics will make a country's products more attractive from a cost and customer service point of view in the global village.

Furthermore, the impact of logistics on a country's land, labor and capital resources; gross national product; rate of inflation, interest rates, productivity, energy costs and availability; as well as employment and standards of living, is also key to the increased focus on logistics and supply chain management in many companies and countries.

### **1.1. Research Objectives**

The objective of this research is to study on how companies and the economic growth of the countries, Ghana and Hungary are faring in logistics management in the nation. The research work sought to discuss this objective by comparing Logistics Performance Index (LPI) of Ghana and Hungary and their top performer in regions and the world as well as income group's best performers. Again, there were comparisons of the two nations across the years up to 2018 since 2019 to date data of World Bank LPI ranking is not ready as a result of the outbreak of COVID-19 pandemic

## **2. LOGISTICS PERFORMANCE INDICATORS IN WORLD BANK OPEN DATA**

The Logistics Performance Index (LPI) is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade

logistics and what they can do to improve their performance. The LPI is based on a worldwide survey of operators on the ground providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade. They combine in-depth knowledge of the countries in which they operate with informed qualitative assessments of other countries where they trade and experience of global logistics environment. For instance, the LPI 2018 allows for comparisons across 160 countries [3]. The LPI therefore comprise both qualitative and quantitative measures and also aids in building profiles of logistics friendliness for the countries. Again, it measures performance along the logistics supply chain within a country and offers two different perspectives: international and domestic.

### **2.1. International LPI**

According to World Bank, the LPI 2018 ranks 160 countries on six dimensions of trade. These dimensions include customs performance, infrastructure quality, and timeliness of shipments. The components analyzed in the International LPI were chosen based on recent theoretical and empirical research and on the practical experience of logistics professionals involved in international freight forwarding. They are the followings: efficiency of customs and border management clearance; quality of trade and transport infrastructure; ease of arranging competitively priced shipments; competence and quality of logistics services; ability to track and trace consignments; frequency with which shipments reach consignees within scheduled or expected delivery times.

The LPI uses standard statistical techniques to aggregate the data into a single indicator that can be used for cross-country comparisons [4].

### **2.2. Domestic LPI**

The Domestic LPI looks in detail at the logistics environments in 116 countries. For this measure, surveyed logistics professionals assess the logistics environments in their own countries. This domestic evaluation contains more detailed information on countries' logistics environments, core logistics processes and institutions, and performance time and cost. This approach looks at the logistics constraints within countries, not just at the gateways, such as ports or borders. It uses four major determinants of overall logistics performance to measure performance: infrastructure; services; border procedures and time and supply chain reliability [5].

According to the World Bank open data, logistic performance can be accessed by the indicators such as Agriculture & Rural Development, Aid Effectiveness, Climate Change, Economy & Growth, Education, Health, Science & Technology and others.

### **2.3. Agriculture and Rural Development**

Agriculture continues to make major and important contributions to global GNP, but society is beginning to demand that agriculture becomes more than simply putting food on the table. Sustainable agriculture in the future will provide economic and social opportunities for the benefit of present and future generations, while maintaining and enhancing the quality of the environment and the natural resource base that supports production, and provides a basis for all terrestrial life on the planet. Agriculture that is truly

sustainable will not be business as usual. It will be a type of agriculture that will provide environmental, economic and social opportunities for the benefit of present and future generations, while maintaining and enhancing the quality of the resources that support agricultural production [6]. World Bank data indicates that Agriculture and Rural Development is increasingly becoming low due to many factors [7].

#### **2.4. Aid Effectiveness**

Over the years, provision of Aids to the different parts of the world has increased. One may measure the effectiveness of Aids by looking at other sub logistic performance index such as Debt forgiveness grants, Grants, excluding technical cooperation, IDA grants, Improved sanitation facilities, Maternal mortality ratio, Mortality rate, under-5, Net ODA received per capita, Net bilateral aid flows from DAC donors and many more.

#### **2.5. Climate Change**

Climate change and disasters pose a growing threat to development progress. Over time, changes in temperature, precipitation patterns, sea level and emission of CO<sub>2</sub> into the atmosphere will further threaten development. For example, higher sea levels can flood coastal infrastructure, more frequent heat waves can threaten human health, and changing rain patterns can reduce agricultural yields. Other hazards such as landslides, tsunamis, and extreme storms endanger communities, disrupt services, and damage property, setting back development progress.

Recognizing this challenge, the World Bank is taking action. As of July 2014, all country planning strategies and investments funded by the International Development Association (IDA) -the World Bank's fund for the poorest- must consider climate and disaster risks and address them as appropriate [8]. The Climate and Disaster Risk Screening Tools provide a structured and systematic way to undertake due diligence and flag potential risks. Both the national policy level tool and the project level tools provide a user-friendly step-by-step approach to understand potential risks to programs and investments.

#### **2.6. Economy & Growth**

Roughly 4.5 billion low-income people in developing countries collectively spend more than \$5 trillion a year. Indeed, the lower consumption segments spend more than the middle and higher consumption segments combined. They spend \$2.3 trillion a year on food and beverages alone [9]. In reality people are value-conscious consumers. They seek out goods and services that can improve their lives. What they are willing to pay for—not what they “need”—shapes business opportunities.

Consumption data suggest the scale of markets in low-income communities. The market for food and beverages in the lower consumption segments is significantly larger than the market in the middle and higher segments combined. The same is true for energy. In most other sectors—clothing and footwear, housing, education, health, water—people in the lower consumption segments collectively spend roughly as much as those in the higher segments. Only in transport, financial services, and information and communication technology (ICT) do the two higher segments combined outspend the lower segments. Other indicators use in accessing economy and growth are Adjusted net national income

(annual % growth), Adjusted net national income per capita (annual % growth), Adjusted net national income per capita (constant 2010 US\$), Adjusted savings: gross savings (% of GNI), Adjusted savings: net national savings (% of GNI), Central government debt, total (% of GDP), Changes in inventories (constant LCU), Expense (% of GDP), Exports of goods and services (% of GDP), GDP growth (annual %), GDP per capita (constant 2010 US\$), GDP per capita (constant LCU), GNI (current US\$), GNI growth (annual %), GNI per capita (constant 2010 US\$) etc.

## **2.7. Education**

Education is fundamental to development and growth. From encouraging higher enrolment, especially for girls and other disadvantaged children, to promote learning for all, the World Bank Group plays a significant role in education globally. Education is a powerful driver of development and one of the strongest instruments for reducing poverty and improving health, gender equality, peace, and stability. Yet, even though there has been great progress in the last decade, some million children are still out of primary and lower secondary school, and 250 million children cannot read or write. Even though there is a deficit, World Bank data shows that school going age children out of school basically primary is on the decline [10].

Some of the indicators to measure education are Children out of school in primary and other levels, Government expenditure on education, total (% of GDP) Government expenditure per student, (% of GDP per capita), Gross enrolment ratio, all level, both sexes, Labor force, female (% of total labor force), Labor force, total, Literacy rate, Population ages 15-64 (% of total) and Pupil-teacher ratio in primary education (headcount basis).

## **2.8. Science & Technology**

Although, science and technology may have negative impact such as new types of technological crimes that were not possible before but now possible as a result of technology, and also, people developing base on dependence on technology and devices, which have been likened to heroin-like addictive behaviors, the impact of science and technology on humankind has been transformative on many levels. In particular, the birth of the Internet and its use by society has changed the way people communicate, learn and understand the world. We can assess how important science and technology has become by looking at some components such as charges for the use of intellectual property, payments and receipts, high-technology exports (% of manufactured exports), Patent applications, non-residents and residents, research and development expenditure (% of GDP) and Scientific and technical journal articles.

Other logistic performance indicators include Transportation, Health, Energy & Mining, Environment, External Debt, Financial Sector, Gender, Social Development, Social Protection & Labor, Trade, and Urban Development, Infrastructure, Poverty, Private and Public Sectors and many more.

## **3. LOGISTICS PERFORMANCE COMPARISON OF COUNTRIES**

On the basis of international scorecard six key dimensions are applied to benchmark countries' performance and also display their derived overall LPI index. The scorecard also

allows comparisons with the world (with the option to display world's best performer) and with the region or income group (with the option to display the region's or income group's best performer) on the six indicators and the overall LPI index. Here, logistics performance index (LPI) is measured as the weighted average of the country scores on the six key dimensions:

- efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs,
- quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology),
- ease of arranging competitively priced shipments,
- competence and quality of logistics services (e.g., transport operators, customs brokers),
- ability to track and trace consignments,
- timeliness of shipments in reaching destination within the scheduled or expected delivery time.

The scorecards use a scale of 1 to 5 (lowest score to highest score) on radar diagram as well as charts and line diagrams to compare all countries (world), region and income groups. In this work the radar diagram was used to do the assessments and values from the diagrams were presented in tables [11].

### 3.1. Logistic Performance of Hungary

#### 3.1.1. Hungary against Germany, the top performer in 2018

Fig. 1 shows a radar diagram comparing the logistic performance index of Hungary and Germany in the year 2018 whereas Table I is a table of score and ranking of the various logistic performance indices in the world extracted from the radar diagram. It could be observed that in all the six LPI Germany performed extremely higher than Hungary in terms of both the score and ranking in the world placing Germany at first (1st) position in the overall LPI and Hungary at thirty-first (31st) position.

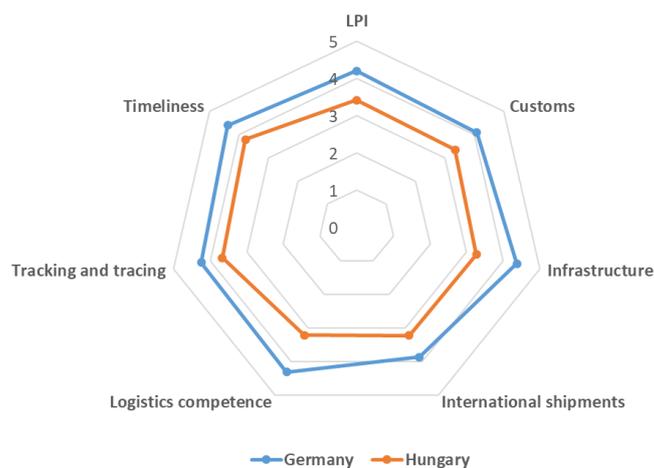


Figure 1. Radar Diagram comparing LPI of Hungary and Germany in 2018 [11]

Table I.

Comparing LPI of Hungary and Germany in 2018 (R=rank)

| Country | Year | Overall LPI |    | Customs | Infra-structure | International Shipments | Logistic Competence | Tracking & Tracing | Time-liness |
|---------|------|-------------|----|---------|-----------------|-------------------------|---------------------|--------------------|-------------|
|         |      | Score       | R  | Score   | Score           | Score                   | Score               | Score              | Score       |
| Germany | 2018 | 4.20        | 1  | 4.09    | 4.37            | 3.86                    | 4.31                | 4.24               | 4.39        |
| Hungary | 2018 | 3.42        | 31 | 3.35    | 3.27            | 3.22                    | 3.21                | 3.67               | 3.79        |

3.1.2. Hungary across years

Fig. 2 shows a radar diagram comparing the logistic performance index of Hungary across the years and Table II is a table of score and ranking of the various logistic performance indices.

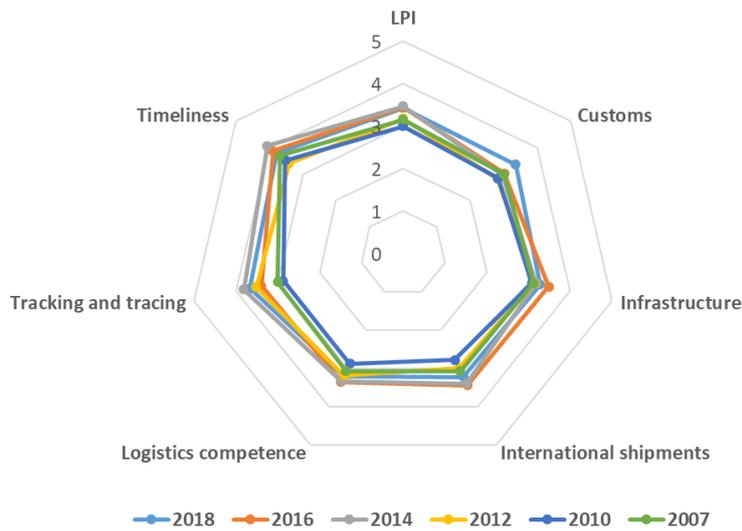


Figure 2. Radar Diagram comparing LPI of Hungary over the years [11]

Table II.

LPI of Hungary across the years

| Country | Year | Overall LPI |    | Customs | Infra-structure | International Shipments | Logistic Competence | Tracking & Tracing | Time-liness |
|---------|------|-------------|----|---------|-----------------|-------------------------|---------------------|--------------------|-------------|
|         |      | Score       | R  | Score   | Score           | Score                   | Score               | Score              | Score       |
| Hungary | 2018 | 3.42        | 31 | 3.35    | 3.27            | 3.22                    | 3.21                | 3.67               | 3.79        |
| Hungary | 2016 | 3.43        | 31 | 3.02    | 3.48            | 3.44                    | 3.35                | 3.40               | 3.88        |
| Hungary | 2014 | 3.46        | 33 | 2.97    | 3.18            | 3.40                    | 3.33                | 3.82               | 4.06        |
| Hungary | 2012 | 3.17        | 40 | 2.82    | 3.14            | 2.99                    | 3.18                | 3.52               | 3.41        |
| Hungary | 2010 | 2.99        | 52 | 2.83    | 3.08            | 2.78                    | 2.87                | 2.87               | 3.52        |
| Hungary | 2007 | 3.15        | 35 | 3.00    | 3.12            | 3.07                    | 3.07                | 3.00               | 3.69        |

It could be observed that in all the six LPI Hungary performance in customs and Tracking and tracing improved representing 10.93% and 7.94% increase respectively compared to

2016 figures. Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs has been declining over the years. However, there was a decline in all the score cards but in terms of overall LPI Hungary has been performing creditable well thereby being able to maintain its 31st Overall LPI ranking as the world LPI is concern.

### 3.2. Logistic Performance of Ghana

#### 3.2.1. Ghana against Germany, the top performer in 2018

The chart compares the logistic performance index of Ghana and Germany in the year 2018 whereas Table III is a table of score and ranking of the various logistic performance indices. It could be observed that in all the six LPI Germany performed extremely higher than Ghana in terms of both the score and ranking.

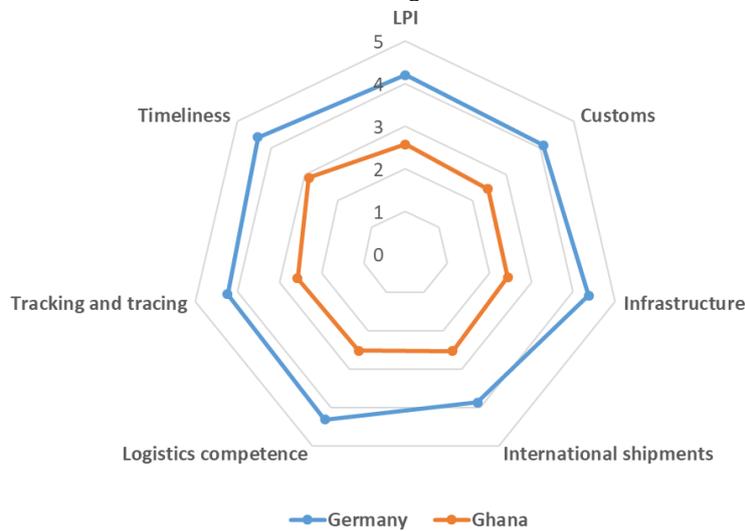


Figure 3. Radar Diagram comparing LPI of Ghana and Germany in 2018

Table III.

Comparing LPI of Ghana and Germany in 2018

| Country | Year | Overall LPI |     | Customs | Infra-structure | International Shipments | Logistic Competence | Tracking & Tracing | Time-liness |
|---------|------|-------------|-----|---------|-----------------|-------------------------|---------------------|--------------------|-------------|
|         |      | Score       | R   | Score   | Score           | Score                   | Score               | Score              | Score       |
| Germany | 2018 | 4.20        | 1   | 4.09    | 4.37            | 3.86                    | 4.31                | 4.24               | 4.39        |
| Ghana   | 2018 | 2.57        | 106 | 2.45    | 2.44            | 2.53                    | 2.51                | 2.57               | 2.87        |

#### 3.2.2. Ghana across years

Observing from the LPI in Table IV it can be seen that Ghana has really done well by moving from 125th position in 2017 to 88th position in 2016 on the rank of the logistics performance index which is good performance. However, Ghana overall performance in the year 2018 declined completely yielding LPI of 2.57 and a ranked of 106th.

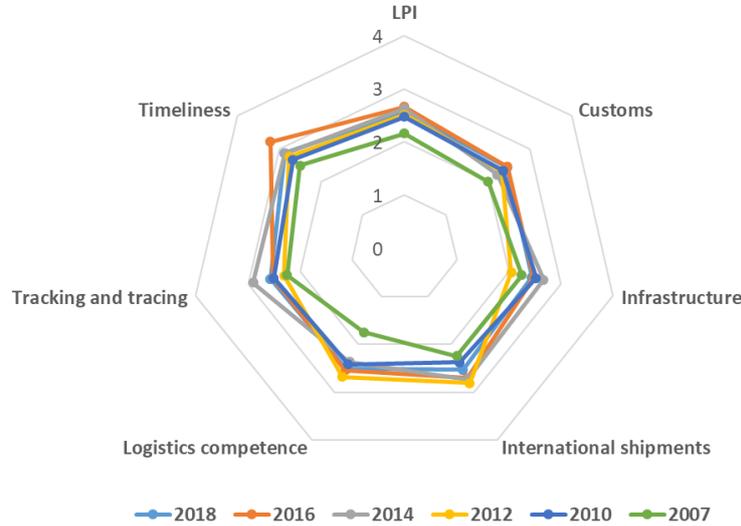


Figure 4. Radar Diagram comparing LPI of Ghana over the years[11]

Table IV.

LPI of Ghana across the years

| Country | Year | Overall LPI |     | Customs Score | Infra-structure Score | International Shipments Score | Logistic Competence Score | Tracking & Tracing Score | Time-liness Score |
|---------|------|-------------|-----|---------------|-----------------------|-------------------------------|---------------------------|--------------------------|-------------------|
|         |      | Score       | R   |               |                       |                               |                           |                          |                   |
| Ghana   | 2018 | 2.57        | 106 | 2.45          | 2.44                  | 2.53                          | 2.51                      | 2.57                     | 2.87              |
| Ghana   | 2016 | 2.66        | 88  | 2.46          | 2.48                  | 2.71                          | 2.54                      | 2.52                     | 3.21              |
| Ghana   | 2014 | 2.63        | 100 | 2.22          | 2.67                  | 2.73                          | 2.37                      | 2.9                      | 2.86              |
| Ghana   | 2012 | 2.51        | 108 | 2.33          | 2.05                  | 2.81                          | 2.68                      | 2.31                     | 2.76              |
| Ghana   | 2010 | 2.47        | 117 | 2.35          | 2.52                  | 2.38                          | 2.42                      | 2.51                     | 2.67              |
| Ghana   | 2007 | 2.16        | 125 | 2.00          | 2.25                  | 2.25                          | 1.75                      | 2.25                     | 2.5               |

### 3.2.3. Ghana against South Africa, the top performer in the region

Whilst Table V gives the score and ranking of the various logistic performance indices, the chart compares the logistic performance index of Ghana and South Africa in the year 2018. It could be observed that in all the six LPI South Africa performed extremely higher than Ghana in terms of both the score and ranking. And these may be attributed to the infrastructures and companies in South Africa.

Table V.

LPI of Ghana and South Africa in 2018

| Country      | Year | Overall LPI |     | Customs Score | Infra-structure Score | International Shipments Score | Logistic Competence Score | Tracking & Tracing Score | Time-liness Score |
|--------------|------|-------------|-----|---------------|-----------------------|-------------------------------|---------------------------|--------------------------|-------------------|
|              |      | Score       | R   |               |                       |                               |                           |                          |                   |
| South Africa | 2018 | 3.38        | 33  | 3.17          | 3.19                  | 3.51                          | 3.14                      | 3.41                     | 3.74              |
| Ghana        | 2018 | 2.57        | 106 | 2.45          | 2.44                  | 2.53                          | 2.51                      | 2.57                     | 2.87              |

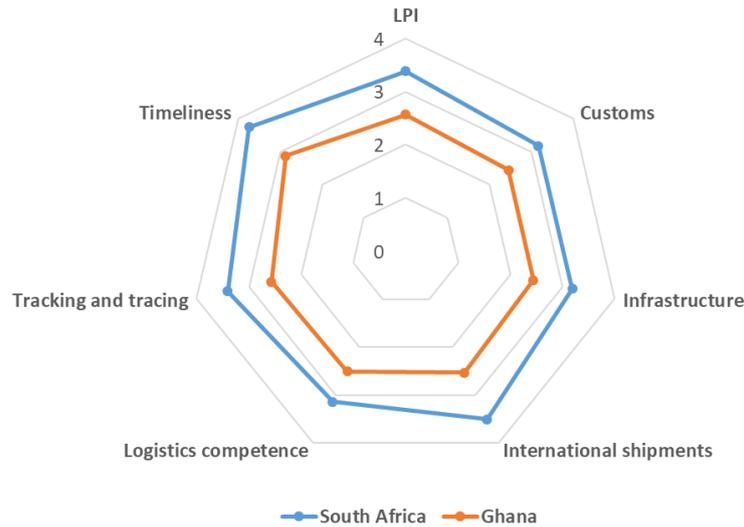


Figure 5. LPI of Ghana and South Africa in 2018 [11]

#### 3.2.4. Ghana against Vietnam, the top performer in the income group

Chart compares the logistic performance index of Ghana and Vietnam, the top performer in the income group in the year 2018 while Table VI gives the score and ranking of the various logistic performance indices. It could be observed that in all the six LPI Vietnam performed extremely higher than Ghana in terms of both the score and ranking.

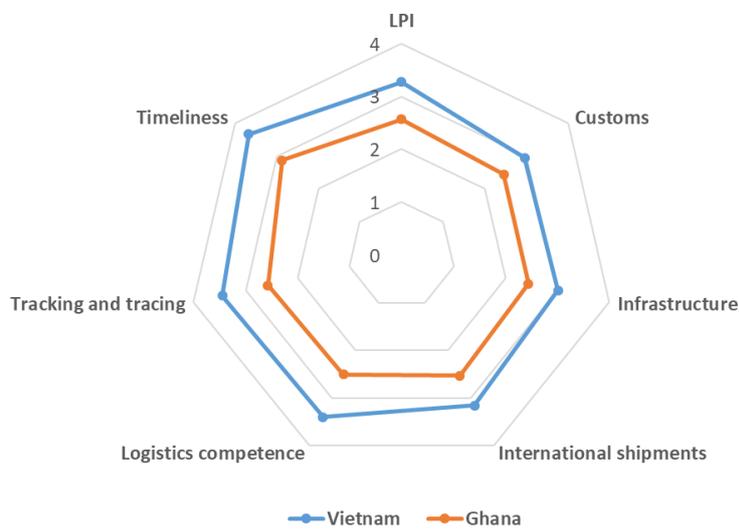


Figure 6. LPI of Ghana and Vietnam in 2018 [11]

Table VI.

*LPI of Ghana and Vietnam, the top performer in income group in 2018*

| Country | Year | Overall LPI |     | Customs | Infra-structure | International Shipments | Logistic Competence | Tracking & Tracing | Time-liness |
|---------|------|-------------|-----|---------|-----------------|-------------------------|---------------------|--------------------|-------------|
|         |      | Score       | R   | Score   | Score           | Score                   | Score               | Score              | Score       |
| Vietnam | 2018 | 3.27        | 39  | 2.95    | 3.01            | 3.16                    | 3.40                | 3.45               | 3.67        |
| Ghana   | 2018 | 2.57        | 106 | 2.45    | 2.44            | 2.53                    | 2.51                | 2.57               | 2.87        |

#### 4. LOGISTICS IN GHANA – STATE OF THE ART

As of the time Ghana became export of crude oil, Companies under this industry find themselves under growing pressure from both customers and shareholders to seek ways to decrease their costs while at the same time increasing performance. They are forced to find ways in which they may improve the efficiency and effectiveness of their operations.

Logistics is playing more important role in the performance of these companies, in particular for companies seeking to increase their competitive advantages and corporate profitability in Ghana. Below are some leading logistics companies making the difference particularly in Ghana.

##### 4.1. Sackson Ohmes Firma

Sackson Ohmes Firma is a Ghanaian logistics and transportation company formed in 1995 by a chartered logistician. It consists of aimed team of logisticians and transportation professionals with vast experience in the industry with projects in Ghana and the West Africa sub-region. The Company was formed by an Ex-Logistics and Transport Manager of SDV/ANTRAK GHANA with over 25 years' experience in the industry, with focus on freight forwarding, supply team management and project logistics. Sackson Ohmes Firma is recognized by various companies as the leading company handling project cargo and heavy lift Specialist across the West Africa sub-region with completed contract for local/multinational companies. They have the state of art technology in monitoring their trucks and equipment. Their modern technology of Global positioning system (GPS) enables the company to track all trucks and equipment in order to update customers on the location of their cargo periodically.

Their mode of operations has been inter-modal transport providing various services by air, sea, and road. The company operates under the strict British standard operating procedure with safety and security of operational staff and customers' cargo as paramount to the company. All trucks, machinery, crane, lashing equipment of the company are certified by Ghana standard board which certify all operational and equipment tools yearly in Ghana. The company ensures all logistics challenges are managed and a solution is provided to keep the customers smiling always.

In 2005-2007 KASAPA TELECOM now EXPRESSO TELECOM awarded the company a contract to distribute and transport telecom Equipment to 1500 Cell sites across the country. After the successful completion of contract, the company has been awarded various distribution & transportation contracts throughout 2008 – 2010 by EGYPTPRO, LINFRA GHANA and VENTURE COMMUNICATION now EATON TOWERS, INFRATECH GHANA (IHS). Sackson Logistics currently has been awarded contract by

SDV/ANTRAK GHANA to provide supply chain, transportation and operational management services and handling all HEAVY LIFT EQUIPMENT to mines sites across WEST AFRICA SUB-REGION. Our company offer transportation and Operational Support Services in handling GHANA GAS PROJECT, Chartered vessel transporting and distributing the 10,000 gas pipes, earth moving Equipment to various sites in the Western region enclave earmark for the Gas PROJECT [12].



Figure 7. Transformer delivery demonstrating the services of Sackson Ohmes Firma Company [12]

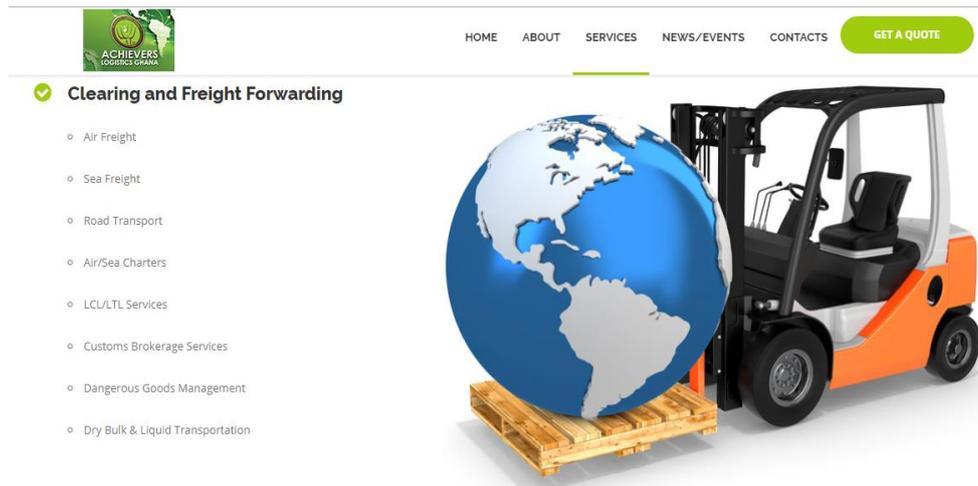
#### 4.2. Achievers Logistics

Established in 2012, Achievers Logistics is one of the fastest growing Clearing and forwarding company in Ghana. Their hallmark has been agile and responsive to client's needs. This culture has served them well and has become the cornerstone of their service strategy. Achievers logistics develops comprehensive freight forwarding, project logistics and relocation service plans tailored to meet specific requirements of customers. This is accomplished by learning customers' exact objectives with regards to their internal and external requirements, thus ensuring that Achievers logistics will provide quality services more consistently than any other service provider in the market.

Their mission is to see positive growth in all their stake holders through hard work, effective communication, honesty and perseverance. Achievers Logistics Ghana Limited has a vision to be the household name in logistics solution and successful business in Ghana in the year 2030.

Since establishment in 2012, Achievers logistics has been recognized as one of the most successful independent freight forwarding, removal and relocation and project logistics companies in Ghana. In the Ghanaian transport and logistics market, Achievers logistics ranks among the "top three". With officers in all the customs entries points in Ghana, and with a vision to establish officers in all the neighboring countries, Achievers logistics planned to be rank as one of the largest and (in terms of number of offices, employees and wide-ranging service portfolio) – most reliable companies in the Ghanaian and west African market.

Achievers logistics provides “one-stop-solution” to meet all logistics requirements. Some other functions of Achievers logistics are to relocate household goods across the region, clearing and forwarding, move an offshore drilling platform across the seal. Achievers logistics has the level of service, expertise and experience to execute its work. Figure 8 demonstrates some of the services of the company [13].



*Figure 8. Clearing of goods illustrating service provision of Achievers Logistics Company [13]*

### **4.3. BAJ Freight and Logistics**

BAJ Freight and Logistics Limited (BAJ), a fully Ghanaian owned company was registered as a business in 2009. The three shareholders, Bart Fred Simpson, Ato Quagraine and Joe Biney commenced the business with fifteen staff members and the company has grown rapidly to become one of the key companies in the freight forwarding industry and a leader in providing customs brokerage, freight forwarding and logistics support in various sectors including the oil and gas sector.

The Company has two branches at Takoradi and the Kotoka International Airport, Accra in addition to the Head Office at Tema. It however operates in all entry points across the length and breadth of the country with current staff strength of over two hundred. BAJ is licensed to transport dangerous goods and was the first logistics company in Ghana to obtain permit from the Atomic Energy to transport radioactive materials. The company has the full range of permits for customs house brokerage, ship agency and provision of Logistics services. BAJ is a member of World Freight Network and Project Cargo Network.

Their mission is to provide excellent and swift logistics, freight forwarding, ship agency and allied services by employing safe and best practices with the most modern technology to satisfy their customers and stakeholders.

The vision of the company is to be the most efficient and total logistics, freight forwarding, ship agency and allied services provider in Ghana.

Up to date, they own and operate 45 trucks and 60 units of Trailers, ranging from 20' / 40' for the container haulage, bulk and bagged goods. The company also operates 11 conventional extendable trucks, Multi Axle Low Loaders; 30ft box trailer, 5 toner HIAB

trucks, 5 toner, and 4.5 toner trucks. To ensure cargo integrity and safety of all, the trucks and trailers are regularly maintained at tip top condition. Their team of professionals risk assesses every route before dispatching trucks on client business. The company's tracking and monitoring system is also linked to a tailor- made comprehensive information portal, providing a loop for clients to follow their business in real time.

In fact, they are the pioneers in radioactive material transportation in Ghana and are aptly serving the industries that move radioactive sources within Mining, Oil and Gas sectors. Their DG team is trained and equipped with personnel Thermos-luminescent dosimeters (TLDs) badges, and radiation survey meters to ensure 100% monitoring of all radiation workers. They are able to obtain an assessment of the effective dose and where appropriate, the equivalent dose in significantly exposed tissues, so as to demonstrate compliance with managerial and national regulatory requirements.

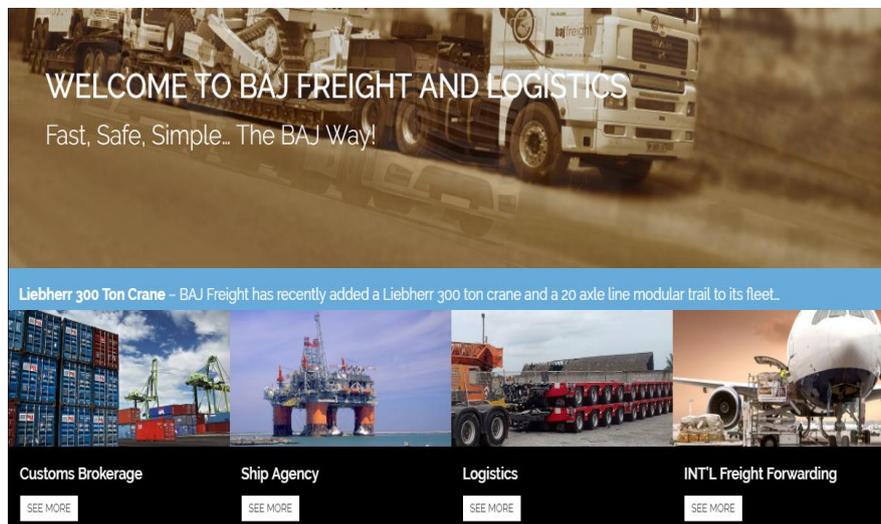


Figure 9. BAJ Freight and Logistics Limited Services [14]

Specially engineered trucks certified by state regulatory agencies are used for transporting radioactive materials and explosives. The company provides special escorts for these materials from loading point to delivery point.

#### 4.4. McDan Shipping and Logistics Company

McDan Shipping and Logistics Company which was established in 1999 is one of the widely renowned shipping and logistics companies in Ghana. The company is located in Accra and has branches in Tema and Takoradi. McDan shipping company in Ghana has warehouses of about 47,000 square meters in total and another 80,000 square meters of open area for goods to be stored out in the open. The warehouses are well-equipped and have well-trained personnel for safely handling of cargoes and vessels and also transport cargoes to every destination in the country. Other services offered by the company include chartered flights, ship agency services, sea and air freight, maintenance and oil and gas logistics [15].

## 5. CONCLUSION

Although, one must be careful when proceeding on benchmarking it is still considered as an important tool. Benchmarking tool serves as a guide to help companies' clients and countries increase their growth and welfare in the current competitive and dynamic global environment. The World Bank's experts produce a range of reports and toolkits for practitioners hoping to improve their countries' logistics performance. The World Bank Group is a leader in logistics performance evaluation, including customs and border control and many more.

Logistics Performance Index (LPI) as a benchmarking tool measures how well countries connect to international and domestic logistics networks. It helps countries identify the challenges and opportunities they face in their trade logistics performance and what they can do to improve. Logistics competitiveness is not just about reducing cost but also about enhancing value. The real question now is how are companies and countries meeting customers' ever increasing requirements at the lowest possible cost? This work which used Logistics Performance Indicators in World Bank Open Data will serve as a guide. It provides informed qualitative and quantitative assessments of the global logistics environment for the benefit of governments and companies.

In addition to the report, there is an interactive cross-country benchmarking tool with data for six years: 2007, 2010, 2012, 2014, 2016 and 2018 on Customs, Infrastructure, International shipments, Logistics competitiveness, Tracking & tracing and Timeliness. From the comparison it could be observed that Ghana and Hungary are behind their respective income group's countries and Germany, the top performer in LPI. Although there are challenges like the weakness of the currency and other factors on the trade environment which has impacted on logistics performance on these countries, there are some progress in the LPI of these countries which is certainly a good sign for logistics companies and firms to study and penetrate the markets. Even though the World Bank LPI ranking for 2019 to date is not ready, Ghana for instance has been an attractive investment hub for the logistics sector in recent years. The country ensures that deliveries of medical and humanitarian supplies in and out of the country arrive on time. This work when followed well could help enhance the Logistic Performance of some countries especially Ghana and Hungary.

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