Red Internacional de Investigadores en Competitividad
Memoria del VI Congreso
ISBN 978-607-96203-0-1

Las opiniones y los contenidos de los trabajos publicados son responsabilidad de los autores, por tanto, no necesariamente coinciden con los de la Red Internacional de Investigadores en Competitividad.

Logistics competitiveness Mexico vs BRICS 2012

DR. MARCO ALBERTO VALENZO JIMÉNEZ. [1]
DR. EVARISTO GALEANA FIGUEROA.[*]
DR. JAIME APOLINAR MARTÍNEZ ARROYO.[*]

Abstract

This paper shows the current situation of logistics competitiveness of Brazil, Russia, India, China and South Africa, in the international economy known as BRICS, in comparison with Mexico, based on the report Connecting to Compete 2012 World Bank, which contains the following variables: - Logistics Performance Index (LDI), the efficiency of the clearance process (speed, simplicity, and predictability of formalities) by border control agencies, including customs, the quality of trade- and transport-related infrastructure (ports, railroads, roads, information technology), the ease of arranging competitively priced shipments, the competence and quality of logistics services (transport operators, customs brokers), the ability to track and trace consignments, customs, infrastructure, international shipments, logistics quality and competence, tracking and tracing, and timelines and the frequency which shipments reach the consignee within the scheduled or expected delivery time.

Keywords: Logistics, Competitiveness, BRICS, Mexico, Likert Scale, SPSS

Resumen

Este artículo muestra la situación actual de la competitividad logística de Brasil, Rusia, India, China y Sudáfrica conocidos en la economía internacional como BRICS, en comparativo con México, tomando como base el reporte Connecting to Compite 2012 del Banco Mundial, que contiene las siguientes variables: Índice de Desempeño Logístico (IDL), la eficiencia del proceso de despacho (velocidad, simplicidad y previsibilidad de formalidades) de los organismos de control fronterizo, incluidos los de aduanas, la calidad del comercio y de transporte relacionados con infraestructura (puertos, ferrocarriles, carreteras, tecnología de la información, la facilidad de la organización de manera competitiva en el precio de los envíos, la competencia y la calidad de la logística los operadores de servicios (transporte, las aduanas y brokers), la capacidad de seguimiento y rastreo de envíos y la frecuencia con que los envíos llegan al destinatario dentro del tiempo programado o el tiempo de entrega.

Palabras Clave: Logística, Competitividad, BRICS, México Escala Likert, SPS

[1**] Facultad de Contaduría y Ciencias Administrativas de la Universidad Michoacana de San Nicolás de Hidalgo.

Introduction

The connection between competition and logistics in a global economy is critical for countries to connect with global trade and achieve the benefits of globalization. The successful integration of a global logistics begins with the ability to move goods across borders rapidly, reliably and cheaply (Francois, Mustra, & Panzer, 2008). Logistics can improve business performance by developing competitiveness in a specific sequence, such as quality, reliability, flexibility, agility and cost efficiency finally (Ferdows & Demeyers, 1990).

Therefore, countries and companies are facing increasingly intensifying global competition, the rapid technological advances, and increasingly demanding customer expectations. For instance, the Academic Alliance Forum suggests that a company's traditional competition versusanother company is shifting towards the business model, since the new challenge is the competition of a company's supply chain versus the other company'ssupply chain. (Vokurka, Zank, & Lund III, 2002).

Globalization today has created a global competitive environment in which companies and governments are heavily involved. In addition, these actors must take strategic decisions continuously in order to improve competitiveness.

One way of carrying out this activity is analyzing the results of the reports issued by the World Bank. One of them is called Connecting to Compete Trade Logistics in the Global Economy, published twice a year starting in 2007, followed by 2009 and now in 2012, this report shows the overall context oflogistics performance by country, region or worldwide.

This article examines the importance of logistics as an essential part of the competitiveness of Mexico and the BRICS[2].It also analyzes the Logistics Performance Index (LPI), document published by the World Bank as part of its methodology using statistical data and the application of questionnaires to 6,000 logistics professionals -which 1,000 are international freight forwarders- in 155 countries. These professionals have expressed their opinion about the eight foreign countries where their companies serve frequently and they highlighted the importance of good logistics performance and its impact in the countries competitiveness.

This report can possibly know the context in Mexico logistics competitiveness so as the BRICS. However, the data shown in this report, clearly demonstrates the level of competitiveness in logistics

[2] In international economics, the acronym used to refer jointly BRICS Brazil, Russia, India, China and South Africa. The thesis was proposed by Jim O'Neill, global economist at Goldman Sachs. According to Goldman Sachs argues that the economic potential of Brazil, Russia, India, and China is such that they can become the four dominant economies by 2050.

these countries have, which is why a different analysis methodology is proposed, by using the published data as a basis to processin SPSS, and with the results, the authors are able to show the real logistic competitiveness.

Literature Review

a) Logistics

The scope of the term logistics derives from the Greek word ***logos***, calculation or thought. The logistics concept has undergone significant changes over the years and it has evolved through several stages (Coyle, Langley, Gibson, Novack, & Bardi, 2008) (Kent & Flint, 1997). In the early 50's and 60's, Logistics has seen the emergence of the concept of systems, which integrate various logistics functions within the physical distribution as Ballou stated in 2004 and 2007. Subsequently, the physical distribution sought to reduce the overall system cost through functional expenses offsets (Brewer & Rosenzweig, 1961), (Lekashman & Stolle, 1965).

For the decade of the 80's, the concept of integrated logistics management emerges, and the physical distribution logistics is added, all in response to the transport deregulation and the increase of globalization (Coyle, et al 2008). The influence of Porter (1985), in the value chain model extends logistics management in order to provide efficiency and effectiveness of an overall system where companies are interrelated from business providers to end consumers, and also, to Gravier & Farris (2008), this became a concept known in the 90's as the Supply Chain Management (SCM).

As noted, Logistics has had an evolution; however, this expression arises at the beginning as a military term used to describe the organization of troops moving in aspects, accommodation and provision of equipment. It has been also implemented as a historical instrument operation of military forces in the world, most notably to its recognition as military strategic tool in the war against Iraq in March 2003. So,it has been so important that it is now considered as a factor of success in the business field.

Logistics is increasingly understood as a strategic activity that is far from operating activities as hiring warehouses or transport vehicles. Therefore, it should be reviewed and redesigned the logistics processes from the beginning in the chain of the activities such as defining the organizational structure, logistics concept product design, definition of customer service levels, determining logistics categories, grouping products by service levels or handling needs, designing information systems, development of communication systems, design of the distribution network, infrastructure design and definition of distribution management indicators.

One might think that an activity as wide as the logistics would be well known as other professional disciplines, as in the case of marketing, finance, law and engineering. Surprisingly, it is not. As the movement does not change the appearance of a product, many people forget that the packaging, material handling, storage or transportation, will add value to the product.

Hence already located Logistics in the business area, its impact is from an economic nature and so, the following definitions are given:

Council of Logistics Management (CLM) provides one of the most comprehensive definitions known in the discipline of logistics: "Logistics is the process of planning, implementing and controlling the efficient and economical flow and storage of raw materials, in process inventory, finished goods and related information from the point of origin to point of consumption in order to fill customer requirements" (Lambert & Stock, 1993) cited(Carranza Torres, 2004).

The Global Supply Chain Forum defines logistics as: "…is the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and shareholders" (The Global Supply Chain Forum, 2008).

The professional advice of the supply chain defines logistics as: "It is the part of the supply chain which plans, implements and controls the efficient and effective flow and storage of both goods, services, and its related information from the point where they originate to the point where they are consumed efficiently and at least cost to meet customer requirements" (Council of Supply Chain Management Professionals, 2008).

According to the latter definition that all organizations belong to one or more supply chains, within that context business success depends on a highly competitive environment.

Therefore,Bowersox (1990) cited Douglas, Stock, & Ellram, (1998), claim that logistics can be the best source of competitive advantage for a company because the logistics help other elements of the marketing mix to duplicate easily with: Product, Price, and Promotion. Considering for instance, good management of relationships with logistics services suppliers can help to give the company a distinct competitive advantage in the areas of customer delivery speed, reliability, availability, and other factors such as service customer.

To achieve the purpose, the companies focus their activity by executingthe coordination of the following activities in terms of ensuring the flow that guarantees a high level of customer service and cost reduction: storing, shipping, sourcing, purchasing, material economy, external transport internal transport inter-company transport, distribution, treatment and care of orders, and recycling products

returned by the customer, production planning, production control, information and communications, quality control, finance, maintenance, marketing , sales and environmental protection.

b) Competitiveness

Competitiveness is often used by governments, businesses and the media as a "vague"concept. However, researchers' thoughts still remain in the absence of a consensus on the concept of Competitiveness, which has meant that scholars have approached this concept from different theoretical perspectives (Valenzo, Martinez, & Bonales, 2010).

Krugman (1994) and Baldwin (1995) argue that nationally, competitiveness is not a relevant concept, as major countries are in no way competing with each other, so it's more about an internal affair of the nation than an external appearance. In the same line, Porter (1990) indicates that a nation's competitiveness depends on the capacity of their industries to innovate and improve. Also, Scott & Lodge (1995) believe that competitiveness is increasingly a matter of strategies and structures, and less and less a consequence of the natural endowments of a country.

Likewise, the department of industry and commerce in the UK business competitiveness defined as: "to a company, Competitiveness is the ability to produce good products and services with the right quality and the right price at the right time. This means meeting the needs of customers more effectively and efficiently than competitors ", (Department of Trade and Industry UK, 1999).

And Ezeala- Harrison (1999), explain that international competitiveness could be defined as the relative ability of a country's companies to produce and market products of a superior quality at lower prices. Thus, the concept of competitiveness of a nation has evolved into a more related local environment, and its determinants endogenous factors of the national economy itself are investigated.

Thus for Ambastha & Momaya (2004), competitiveness is defined as the ability to compete. That is the ability to design, produce, and deliver superior products on the market, to those offered by competitors, considering the price.

Thus, an organization is competitive in the eyes of its customers if that organization can deliver a better value compared to its competitors, achieve lower prices with benefits equal or exceeding those of its competitors. Customer value, therefore, can be considered as the perceived advantage regarding its requirements; Ambastha & Momaya (2004) cited (Valenzo, Martínez, & Bonales, 2010).

Results

This section shows the current status of logistics competitiveness of Mexico and the BRICS using the report issued by the World Bank entitled "Connecting to Compete" (Trade Logistics in the Global Economy 2012), where this study shows Logistics Performance Index (LPI) and its six components include:

1) The efficiency of the clearance process (speed, simplicity, and predictability of formalities) by border control agencies, including customs.
2) The quality of trade- and transport-related infrastructure (ports, railroads, roads, information technology).
3) The ease of arranging competitively priced shipments.
4) The competence and quality of logistics services (transport operators, customs brokers).
5) The ability to track and trace consignments.
6) The frequency with which shipments reach the consignee within the scheduled or expected delivery time.

This report used a standardized questionnaire with two parts (international and domestic). For the international part, respondents evaluated six key aspects in the area of logistics performance in eight major foreign markets. For the inside part, respondents provided qualitative and quantitative data on the logistics environment in the countries where they work. The survey also collects data on the internal logistics as load times and costs of import and export transactions.

The measurement system uses values scales ranging from 1 to 5, one being the lowest or least efficient and 5 the highest level or more efficient. Theanalyzed performance areas were:

The table Nº 1, show Logistics Performance Index (LPI) and variables, it is observed the Ranking of globalleading, Singapore with Mexico and the BRICS in Logistics, and also indicates the position occupied by these countries globally, noting that the most developed country in this area is South Africa with a score of 3.67, ranking 23 in the world, showing a homogeneous development in all the elements that make up this index measurement.

Table Nº 1
Logistics Performance Index (LPI) Singapore, Mexico and the BRICS

Position of Mexico and the BRICS	Global position	Country	Study Variables Report Connecting to Compete			
			Logistics Performance Index	Customs	Infrastructure	International Shipments
NA	1	Singapure	4.13	Rank 1 Score 4.10	Rank 2 Score 4.15	Rank 2 Score 3.99
1	23	South África	3.67	Rank 26 Score 3.35	Rank 19 Score 3.79	Rank 20 Score 3.50
2	26	China	3.52	Rank 30 Score 3.25	Rank 26 Score 3.61	Rank 23 Score 3.46
3	45	Brazil	3.13	Rank 78 Score 2.51	Rank 46 Score 3.07	Rank 41 Score 3.12
4	46	India	3.08	Rank 52 Score 2.77	Rank 56 Score 2.87	Rank 54 Score 2.98
5	47	México	3.06	Rank 66 Score 2.63	Rank 47 Score 3.03	Rank 43 Score 3.07
6	95	Russian Federation	2.58	Rank 138 Score 2.04	Rank 97 Score 2.45	Rank 106 Score 2.59

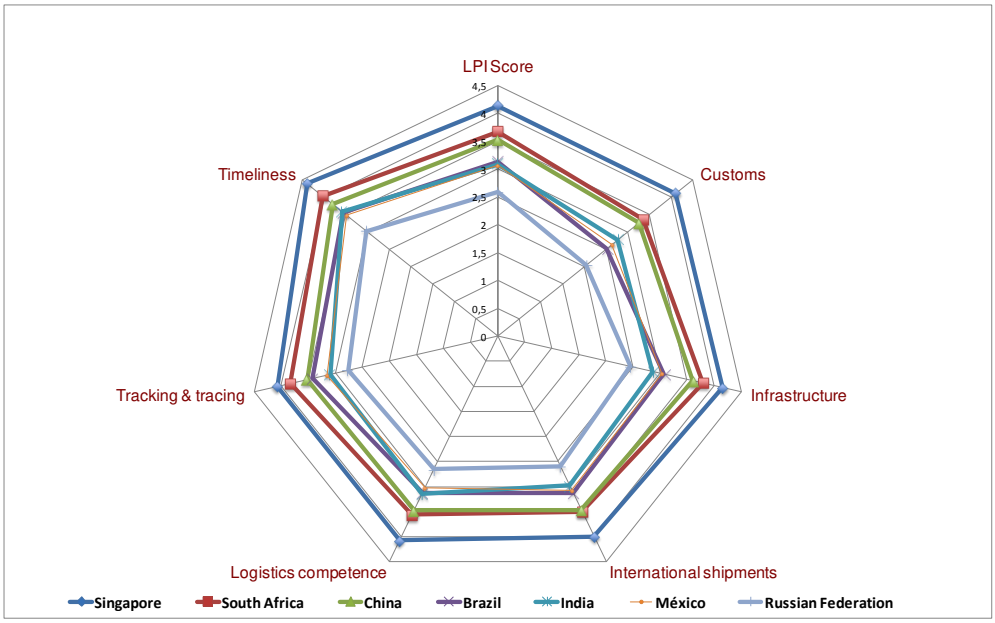
Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Table Nº 2
Logistics Performance Index (LPI) Singapore, Mexico and the BRICS

Position of Mexico and the BRICS	Global position	Country	Study Variables Report Connecting to Compete		
			Logistics quality and competence	Tracking and tracking	Timeliness
NA	1	Singapure	Rank 6 Score 4.07	Rank 6 Score 4.07	Rank 1 Score 4.39
1	23	South África	Rank 24 Score 3.56	Rank 16 Score 3.83	Rank 20 Score 4.03
2	26	China	Rank 28 Score 3.47	Rank 31 Score 3.52	Rank 30 Score 3.80
3	45	Brazil	Rank 41 Score 3.12	Rank 33 Score 3.42	Rank 49 Score 3.55
4	46	India	Rank 38 Score 3.14	Rank 54 Score 3.09	Rank 44 Score 3.58
5	47	México	Rank 44 Score 3.02	Rank 49 Score 3.15	Rank 55 Score 3.47
6	95	Russian Federation	Rank 92 Score 2.65	Rank 79 Score 2.76	Rank 94 Score 3.02

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Figure Nº 1
Comparative Logistics Performance Index (LPI) Singapore, Mexico and the BRICS



Source: The World Bank. (17 de 03 de 2012). *Logistics Performance Index*. Obtenido de LPI Results 2012: http://lpisurvey.worldbank.org/international/scorecard/radar/254/C/SGP/2012/C/BRA/2012/C/CHN/2012/C/MEX/2012/C/RUS/2012/C/ZAF/2012/C/IND/2012#chartarea

Proposed methodology: Valenzo-Martinez Methodology

This section presents the "Proposed Methodology for analyzing the Logistics Performance Index (LPI)" shown in Table No. 1.

The proposal is to show a new level of analysis, since the one given by the Logistics Performance Index only shows the position of Mexico and the BRICS and it doesn't give any guidelines to find the accuratelevel to Logistics Competitiveness in the analyzed countries.

Furthermore, the Valenzo-Martínez methodology allows a different classification from the one used by the World Bank, and also, it helps the reader to interpret the shown data in a more agile and easily interpretable way. Besides, this methodology shows the general position of the country in Logistics performance; this method provides a competitive performance level Logistics under the perspective of the methodology proposed in Latin American countries. Similarly, the proposal allows for the analysis of logistics performance by variable.

To make the proposed methodology, the following steps are established:

1. It starts from the data of LPI, which has values of 1 to 5, where the value 1 is the lowest or less efficientand 5 is the higher or more efficient (or any other report that needs to be analyzed)
2. Establishing a measurement scale in which the different levels are determined logistics competitiveness as shown in the following table:

Table Nº 3
Logistics Performance Scale

Very High			High			Middling			Low			Very Low		
H	R	L	H	R	L	H	R	L	H	R	L	H	R	L

Source: Own
Note: H= High, R= RegularL= Low

3. After creating the scale, feed the data into the SPSS software, then proceed to their analysis. Next, open the tab "analyze" and select "descriptive statistics", and then a new dialog window will open, select“contingency tables” and proceed to select the variable “country” and the variable to be analyzed. The program yields the shown results right away.

4. The results of the final grade for each country, once processed, are classified in the ranges set out in Table # 2.

5. The analysis has been done and the results are shown below.

OPTICAL ANALYSIS UNDER THE PROPOSED METHODOLOGY

The methodology allows mainly,a deeper analysis and thus to establish the classification of Mexico and the BRICS according to the Logistics Performance Index (LPI) but with a greater accuracy.

Next, the results of IDL will be displayed, those results are shown at two levels of analysis, the traditional way (used by the World Bank: one of five ranges), and the methodology "Valenzo-Martinez" which is also a scale of 5 ranks, but subdivided into three sub-ranges: High, Regular and Low generating a Likert scale of 15 sorting classification options and permit a deeper level of analysis on the data already shown in the earlier report issued by the World Bank, using a different perspective to allow a more detailed decision-making.

Table Nº 4
AnalysisLogistics Performance Index (LPI) Mexico and the BRICS Traditionally

Very High**Logistics Performance 5 - 4.2 pts.**	High **Logistics Performance 4.1 – 3.41 pts.**	Regular **Logistics Performance 3.40 – 2.60 pts.**	Low **Logistics Performance 2.59 – 1.8 pts.**	Very Low **Logistics Performance 1.7 - 1.0 pts.**
5	**4**	**3**	**2**	**1**
	South África (3.56), China (3.47)	Brazil(3.13), México (3.06) Russian Federation (2.65)		

Source: Own

Note:This is the scale used for the classification of countries according to World Bank LPI where 1 (one) is the worst and least efficient and 5 (five) best the highest or most efficient.

As seen in Table # 4, the classification made by the World Bank does not allow Mexico governments and the BRICS' to make a proper decision since it is not clear the gap between a nation and another.

To give an example, if we place Brazil in the variable infrastructure 3.07 compared to Mexico with a 3.03, it is only appreciated that there is a difference of 0.04 tenths benefitingBrazil but this rate doesn't show both countries competitiveness level nor globally or regionally, that is the reason why it is intended to make a contribution to the analysis of this kind of reports.

Table # 5

Logistics Performance Index (LPI) vs. proposed methodology (Valenzo-Martinez)

Logistics Performance Index (LPI) World Bank			**PROPOSED METHODOLOGY VALENZO- MARTINEZ**														
			Very High **Logistics Competitiveness 5 - 4.2 pts.**			High **Logistics Competitiveness 4.1 – 3.41 pts.**			Regular **Logistics Competitiveness 3.40 – 2.60 pts.**			Low **Logistics Competitiveness 2.59 – 1.8 pts.**			Very Low **Logistics Competitiveness 1.7 - 1.0 pts.**		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	23	South África (3.67)						**X**									
2	26	China (3.52)						**X**									
3	45	Brazil (3.13)								**X**							
4	46	India (3.08)								**X**							
5	47	México (3.06)								**X**							
6	95	Russian Federation (2.58)										**X**					

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Table # 5 shows the Logistics Performance Index (LPI) based on the World Bank classification. It is observed that there is a numeric variation between the first position, South Africa (3.67 points) and the Russian Federation (2.58) and there is only a difference of 1.09 in favor of the first country, however, this kind of measurement doesn't allow the governments to have a clear vision of the Logistics Performance Index, on the contrary, with the proposed methodology it can be appreciate three levels for these six economies and they are as follow:

Rank***High-*** *High:* South Africa, China

Rank ***Regular***- regular: Brazil, India, México

Rank ***Low-*** *High:* Russian Federation

Table # 6

Customs vs. proposed methodology (Valenzo-Martinez)

CUSTOMS World Bank			PROPOSED METHODOLOGY VALENZO- MARTINEZ CUSTOMS														
			Very High Logistics Efficiency 5 - 4.2 pts.			High Logistics Efficiency 4.1 – 3.41 pts.			Regular Logistics Efficiency 3.40 – 2.60 pts.			Low Logistics Efficiency 2.59 – 1.8 pts.			Very Low Logistics Efficiency 1.7 - 1.0 pts.		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	26	South África (3.35)							**X**								
2	30	China (3.25)							**X**								
3	52	India (2.77)									**X**						
4	66	México (2.63)										**X**					
5	78	Brazil (2.51)										**X**					
6	138	Russian Federation (2.04)												**X**			

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Table # 6, shows the Logistics efficiency level as expressed by the World Bank: it is remarkable that there is a numeric variation between the first position, China (3.25 points) regarding to India (2.77), getting as a result the difference of 0.64 in favor of China, apparently the difference is minimum, however, on the contrary, with the proposed methodology it can be appreciate three levels for these six economies and they are as follow::

Rank***Regular***- *High:*South Africa, China
Rank ***Regular***- Low: India
Rank ***Low-*** *High:* Brazil, México
Rank ***Low-*** *Low:*Russian Federation

Table # 7

Infrastructure vs. proposed methodology (Valenzo-Martinez)

INFRASTRUCTURE World Bank			**PROPOSED METHODOLOGY VALENZO- MARTINEZ INFRASTRUCTURE**														
			Very High **Logistics Infrastructure 5 - 4.2 pts.**			High **Logistics Infrastructure 4.1 – 3.41 pts.**			Regular **Logistics Infrastructure 3.40 – 2.60 pts.**			Low **Logistics Infrastructure 2.59 – 1.8 pts.**			Very Low **Logistics Infrastructure 1.7 - 1.0 pts.**		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	19	South África (3.79)					**X**										
2	26	China (3.61)						**X**									
3	46	Brazil (3.07)								**X**							
4	47	México (3.03)									**X**						
5	56	India (2.87)									**X**						
6	97	Russian Federation (2.45)										**X**					

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Concerning the Logistics Infrastructure Variable it can be appreciate five levels using the proposed methodology, emphasizing thatSouth Africa enhanced its infrastructure due to the high investment towards the Football World Championship in 2010. Next, the classification of these countries is shown:

Rank***High***- *Regular:* South Africa
Rank***High***- *Low:* China
Rank***Regular***-*Regular:*Brazil
Rank ***Regular***- Low: India,México
Rank ***Low-*** *High:*Russian Federation

Table # 8

International Shipments vs. proposed methodology (Valenzo-Martinez)

INTERNATIONAL SHIPMENTS World Bank			**PROPOSED METHODOLOGY VALENZO- MARTINEZ INTERNATIONAL SHIPMENTS**														
			Very High **Logistics International Shipments 5 - 4.2 pts.**			High **Logistics International Shipments 4.1 – 3.41 pts.**			Regular **Logistics International Shipmentse 3.40 – 2.60 pts.**			Low **Logistics International Shipments 2.59 – 1.8 pts.**			Very Low **Logistics International Shipments 1.7 - 1.0 pts.**		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	20	South África (3.50)						**X**									
2	23	China (3.46)						**X**									
3	41	Brazil (3.12)								**X**							
4	43	México (3.07)								**X**							
5	54	India (2.98)								**X**							
6	106	Russian Federation (2.59)										**X**					

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

According International Shipments variable and according to the Valenzo-Martinez methodology , there are only three proposed levels. It can be seen two main groups and they are:

Rank***High***- *Low:* South Africa, China
Rank ***Regular***-*Regular:* Brazil, India, México
Rank ***Low-*** *High:*Russian Federation

Table # 9

Logisticsquality and competence vs. proposed methodology (Valenzo-Martinez)

LOGISTICS QUALITY ANDCOMPETENCE World Bank			PROPOSED METHODOLOGY VALENZO- MARTINEZ LOGISTICSQUALITY AND COMPETENCE														
			Very HighLogistics quality 5 - 4.2 pts.			High Logistics quality 4.1 – 3.41 pts.			Regular Logistics quality 3.40 – 2.60 pts.			Low Logistics quality 2.59 – 1.8 pts.			Very Low Logistics quality 1.7 - 1.0 pts.		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	24	South África (3.56)						X									
2	28	China (3.47)						X									
3	38	India (3.14)							X								
4	41	Brazil (3.12)								X							
5	44	México (3.02)								X							
6	92	Russian Federation (2.65)									X						

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Concerning to the Logistics Quality and Competence, according to the proposed methodology, it can be appreciated that:

Rank***High***- *Low:* South Africa, China
Rank ***Regular***-*High:* India
Rank ***Regular***-*Regular:* Brazil, México
Rank ***Regular***-*Low:*Russian Federation

Table # 10

Tracking andTracing vs. proposed methodology (Valenzo-Martinez)

TRACKING AND TRACING World Bank			PROPOSED METHODOLOGY VALENZO- MARTINEZ TRACKING AND TRACING														
			Very High **Tracking and Tracing 5 - 4.2 pts.**			High **Tracking and Tracing 4.1 – 3.41 pts.**			Regular **Tracking and Tracing 3.40 – 2.60 pts.**			Low **Tracking and Tracing 2.59 – 1.8 pts.**			Very Low **Tracking and Tracing 1.7 - 1.0 pts.**		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	16	South África (3.83)						**X**									
2	31	China (3.52)						**X**									
3	33	Brazil (3.42)						**X**									
4	49	México (3.15)								**X**							
5	54	India (3.09)								**X**							
6	79	Russian Federation (2.76)									**X**						

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Now, on Table No.# 10 the variable Tracking and Tracing and according to the proposed methodology, there are three groups, remarking that Brazil is located on the same level tan South Africa and China and which results are the following:

Rank***High***- *Low:* South Africa, China, Brazil,
Rank ***Regular***- *Regular:* México e India
Rank ***Regular***-*Low:*Russian Federation

Table # 11

Timeliness vs. proposed methodology (Valenzo-Martinez)

TIMELINESS World Bank			PROPOSED METHODOLOGY VALENZO- MARTINEZ TIMELINESS														
			Very High **Timeliness 5 - 4.2 pts.**			High **Timeliness 4.1 – 3.41 pts.**			Regular **Timeliness 3.40 – 2.60 pts.**			Low **Timeliness 2.59 – 1.8 pts.**			Very Low **Timeliness 1.7 - 1.0 pts.**		
Position of Mexico and the BRICS	Global position	Country	H	R	L	H	R	L	H	R	L	H	R	L	H	R	L
1	20	South África (4.03)				**X**											
2	30	China (3.80)					**X**										
3	49	Brazil (3.55)						**X**									
4	54	India (3.09)						**X**									
5	55	México (3.47)							**X**								
6	94	Russian Federation (3.02)								**X**							

Source: Author's calculations based on data from the report "Connecting to Compete" (Trade Logistics in the Global Economy 2012), World Bank publication.

Finally, in Timeliness Variable,the small but significant differences are appreciated and they can demonstrate different levels:

Rank***High***- *High:* South Africa
Rank***High***- *Regular:China*
Rank***High***- *Low:*Brazil e India
Rank ***Regular***-*High:* México
Rank ***Regular***-*Regular:*Russian Federation

Conclusions

The methodology Valenzo-Martinez is conceived with the aim of proposing a different perspective of analysis, regarding the work issued by the World Bank entitled "Connecting to Compete", which was used in this paper as a major input to show the benefits of the proposed methodology, and when making the comparison resulted in marked differences when ranking countries by their logistics performance.

Once the methodology was used and the results obtained, they allow a better decision-making in relation to each of the variables that impact the Logistics performance.

Regarding the scope of this proposed methodology, we can say that is broad and diverse, and it can be used in databases, established reports as well as in research that requires to establish some kind of rating or ranking on a scale where a Likert scale is used.

According to the results shown by the World Bank in IDL variable, Mexico and BRICS in logistics performance is shown, and also, it is found out that South Africa is ranked 23rd, China 26th, Brazil the 45th, India 46th, Mexico ranks in 47th place and the Russian Federation in 95, and so the report shows the logistics performance of these countries: 3.67, 3.52, 3.13, 3.08, 3.06, and 2.58 respectively.

However, if we look at the results reported by the World Bank, only show a descending sort high to low, and it does not infer a significant difference between one country and another, only the numerical difference.

Since this classification is given in values from 1 to 5, the World Bank proceeded to give a description to each range: 5 *veryhigh*, 4 *high*, 3 *regular*, 2 *low*and 1 *very low* in Logistics performance. Once the analysis is done under these values, we find that: Chile and 11 nations, fall in the range of "regular" and 7 countries in the range of "low logistics performance". Accordingly to this formation, two groups are formed in Latin America.

These results show a high concentration in the range of "regular"; although the numerical differences are marked, in some cases they are included in the same rank equally.

For example: Brazil, India and Mexico with logistics performance of 3.13, 3.08, 3.06 and a 2.58 Russian Federation, are classified in the same range of Middling Performance Logistics despite the noticeable difference between the first three and the last one.

In the other hand, when using the methodology Valenzo-Martinez the five scale ranges remains: 5 *very high,* 4*high*, 3 *average*, 2 *low*, and 1 *very low*Logistic performance. However, within each of these ranges, three sub-ranges were established: High, Regular and Low, giving a Likert scale with 15 sorting options resulting in a deeper level of analysis, which will be demonstrated in the following results:

Rank***High-*** *High:* South Africa, China

Rank ***Regular***- regular: Brazil, India, México

Rank ***Low-*** *High:* Russian Federation

Finally, we can say that for Mexico and the BRICS **there are noticeable differences in Logistics performance** as it became evident by the results.

REFERENCES

Ambastha, M., y Momaya, K**.** (2004). Competitiveness of Firm: Review of Theory, Frameworks, and Models. *Singapore Management Review, 1* (26), 45-61.

Baldwin, R.(1995). *The problem with competitiveness.*Genova: EFTA.

Ballou, R. H**.** (2007). The Evolution and Future of Logistics and Supply Chain Management. *European Business Review*, *19* (4), 33-48.

Ballou, R.(2004). *Logística Administración de la cadena de suministro.*México: PERSON EDACACIÓN.

Brewer, S., y Rosenzweig, J**.** (1961). Rhochrematics and organizational adjustment. *California Management Review, 3* (3), 52-71.

Carranza Torres, O**.** (2004). Historia y temática de la logística: ¿Dequé estamos hablando? En O. Carranza, & F. Sabria, *Logística mejores prácticas en Latinoamérica*(págs. 3-26). Guadalajara: Thomson.

Council of Supply Chain Management Professionals, (15 de 04 de 2008). *Council of Supply Chain Management Professionals*. Recuperate el 10 de 09 de 2008, de cscmp.org/

Coyle, J., Langley, C., Gibson, B., Novack, R., & Bardi, E**.** (2008). *Supply Chain Management: A Logistics Perspective.* South-Western, Mason,OH: Cengage Learninng,.

Department Of Trade And Industry Uk, D.(16 de 08 de 1999). *Regional Competitiveness Indicator London*. (D. Publisher, Productor, & Department for trade and Industry/ Office for National Statics) Recuperate el 09 de 07 de 2008, de www.nwriu.co.uk/indicators.asp

Douglas, L. M., Stock, J. R., & Ellram, L. M**.** (1998). *Fundamentals of Logistics Management.*Singapore: Mc Graw Hill.

Ezeala- Harrison, F.(1999). *Theory and policy of international competitiveness.* Connecticut,London: Praeger Westport.

Ferdows, K., y Demeyers, A. (1990). Lasting improvements in manufacturing performace: in search of a new teory. *Journal operations Management*, *9* (2), 168-183.

Francois, J., Mustra, M., & Panzer, J. (2008). *Connecting to Compite.*Banco Mundial, Departamento de Comercio Interncional. Washington: Banco Mundial.

Gravier, M. J., y Farris, T. (2008). An Analysis of Logistics Pedagogical Literature: Past and Future Trends in Curriculum, Content and Pedagogy. *The International Journal of Logistics Management*, *19* (2), 233-253.

Kent, J., y Flint, D.(1997). Perspectives on the evolution of logistics thought. *Journal of Business of Logistics*, *18* (2), 15-29.

Krugman, P. (Marzo- Abril de 1994). Competitiveness. A dangerous obsession. *Foreingn Aggairs* , 1-17.

Lambert, D. M., & Stock, J. R.(1993). *Strategic Logistics Management.* USA: Mc Graw Hill.

Langley, J.(2000). Evolución del concepto de logística. En M. Christoper, *Logística Aspectos Estratégicos* (págs. 41-47). México: LIMUSA.

Lekashman, R., & Stolle, J.(1965). The Total Cost Approach to Distribution. *Business Horizons, 8* (1), 33-46.

Porter, M.(1990). ¿Donde Radica la ventaja competitiva de las Naciones? *Harvard Deusto Business Review*, *IV Trimestre*.

Porter, M.(1985). *Competitive Advantage.* New York: The Free Press.

Scott, B., & Lodge, G. C**.** (1995). *US Competitiveness in the World Economy.* Boston, MA: Harvard University Press.

The Global Supply Chain Forum, G. (2008). *USING LOGISTICS TO BUILD A COMPETITIVE.*México: Congreso Internacional de Logística.

The World Bank. (17 de 03 de 2012). *Logistics Performance Index*. Obtenido de LPI Results 2012: http://lpisurvey.worldbank.org/international/scorecard/radar/254/C/SGP/2012/C/BRA/2012/C/CHN/2012/C/MEX/2012/C/RUS/2012/C/ZAF/2012/C/IND/2012#chartarea

Vokurka, R., Zank, G. M., y Lund Iii, C**.** (2002). Improving Competitiveness through Supply Chain Management. *Competitiveness Review, 12* (1), 14.