
MARITIME AUXILIARY SERVICES (MAS) AND VALUE CONTRIBUTION OF A GLOBAL VALUE CHAIN NON-INTEGRATED SEGMENT: THE CASE OF PORT OF SANTOS AND THE FOOTWEAR INDUSTRY (SÃO PAULO/BRAZIL)

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ABSTRACT

A new context has emerged when World Trade Organization (WTO) was founded in 1995. That new scenario has brought a fragmentation of the value chain, where facilities are spread worldwide. Nevertheless, this fragmentation needs linkages in order to give unity to the value chain, and maritime auxiliary services (MAS) at ports are part of those linkages. Our purpose was to define a framework, focusing on Port of Santos container's terminals, and on the footwear industry from the São Paulo region (Brazil), where can be assessed the value contribution of the MAS, in order to integrate effectively and efficiently local-specific assets into global value chains. Methodology adopted applied an hypothetic-deductive approach; two propositions emerged from literature review; afterwards quantitative methods were conducted (principal components analysis, clusters analysis and bivariate statistics; random sample of 115 SMEs), and two latent variables have been extracted: MAS contribute to enhance local competitiveness?; MAS are easily integrated into local companies operations?. Based on results a framework in order to classify MAS value contribution to local-specific assets was developed. Our conclusions have shown a negative perception about MAS at Port of Santos, which can be classified as 'Poor and Operational Non-Adjusted Linkage'.

Keywords: *global value chain, internalization theory, maritime ports, auxiliary maritime services, footwear industry*

1. INTRODUCTION

The Uruguay Round closure was an important moment. GATT (General Agreement on Tariffs and Trade) has been transformed, and it was created, in 1995, in Geneva, the WTO (World Trade Organization). A decrease of trade tariff barriers was agreed, and new scenario has been launched: an era in which global operations can be performed, developing new ways of creating economic value. Since then many companies have been developing exploitive and explorative offshoring operations (Balussi, Sedita, 2010).

Several authors discussed this topic, and among them Humphrey and Schmitz (2002) have focused their research on global value chains. For these authors it is seen, since then, a new division of labor. A fragmented production process is the result of this new division. New typologies of coordination are also known and tested, more complex than the initially proposed by the theory of transaction costs (Coase, 1937). New skills and resources are needed to integrate different actors. Based on Humphrey and Schmitz (2002) and Gereffi, *et al* (2005) contributions, Chiarvesio *et al* (2010, pp. 336) have stated: "The management business-to-business relationships can rely on alternative mechanisms, where pure hierarchy and market approaches are just extremes of a continuum".

It is seen, and has been implemented, a portfolio of different approaches to global value chains design, from the basic internalization option (Buckley, Casson, 1976; Dunning, 2000), to joint ventures, strategic alliances, licensing and franchising. A process – globalization – where companies have seen revealed new resources, and exchange products, modules, parts and services. The value chain fragmentation and the increasing of international trade is, for several authors, connected (Humphrey, Schmitz, 2002; Fenestra 2003). Some location-specific assets would be, and have been in the last decade, a source of inward FDI attraction and, at same time, would allow new joint ventures and licensing operations, based mainly on exploitive offshoring operations. A

vertical FDI approach, focused on low-labor costs, but at same time in some location-specific assets, as can be agglomeration economies, special human resources skills concentration (e.g. in some industrial districts), among other issues (Balussi, Sedita, 2010).

The fragmented value creation, as concept, is playing an important role in order to be a source of new inward FDI in emerging economies (Antràs, Caballero, 2009). For several SMEs in emerging markets this new scenario was also an opportunity. These companies have faced a challenge: to be part of those global value chains, as providers, sometimes in a quasi-hierarchy governance structures, the captive network typology, as it was mentioned by Humphrey and Schmitz (2002, 2004). Gereffi *et al* (2005) define the global value chain quasi-hierarchy governance concept as a context in which a company exercises a high control over other firms in the chain, using this power to specify products and processes.

However, if global value chain governance assumes different typologies, some important tasks linking its actors are not integrated or controlled, and are performed by independent actors. These tasks are crucial in order to create value and are links of the chain. Additionally, some of these tasks are important to preserve or enhance location-specific assets (or country-specific assets). These links add or can subtract value.

Among these links we can find Port's operations. These operations are performed by external actors, which are not part of the supplier/client relationship, however impacts on price, lead-times, lead-times reliability, among other issues. If some SMEs, based on location-specific assets would get orders from foreign demand, or a license from a MNC, to produce and export, there is a segment of the value chain that is not controlled or integrated.

That segment of the value creation is performed by the logistics chain, which includes road and/or railway transport in the hinterland, shipping companies, freight forwarders, insurance trade & transport companies, country port's authorities, among other local agents.

Our purpose is, based on a deductive approach, and focusing on Port of Santos (São Paulo/Brazil), the development of a framework to assess the perception of Port of Santos service value by the footwear industry, an important export sector of the São Paulo Region (Brazil) economy. With our research would be possible to fulfill a gap within the value chain, giving information to the Port of Santos community about its contribution to local/country-specific assets, and country competitiveness in order to attract FDI and other investments in order to serve global value chains.

Brazil, and especially São Paulo region, footwear industry and Port of Santos, are a good context to develop this research. Brazil is one the BRICs, and is, among them, the second attracting FDI: in 2010 more than 45 billion dollars were invested by foreign companies in Brazil (EIU, 2011). And, within this country, São Paulo region concentrates 38% of the GDP, and shows the highest GDP *per capita* among the Brazilian regions (Brazil Federal Government, 2011). Furthermore, Port of Santos, located in southeast of the Brazilian territory, handles more than 2,5 million TEUs – Twenty-Foot Equivalent Units – and is the maritime gateway of São Paulo region. Port of Santos is the biggest port of Latin American, and serves an economy that is facing an emerging trend (CODESP, 2010).

In this context, footwear industry is one of the most important exporting industries, producing in a yearly basis 650 million pairs of shoes. From Brazil 140 international markets are being served and 26% of the Brazilian footwear production is exported (169 million pairs). In São Paulo State we can find 30% of the companies, and more than 18% of the jobs created by this industry (Brazilian Federal Government, 2008).

FDI, quasi-hierarchy approaches, or licensing processes, which enable future exports, are disputed by several different locations, even within the same country. Global value chains are looking for new resources to produce in the most efficient way. The non-controlled or non-integrated parts of the value chain can damage other location-specific advantages (assets). The industry perception of the port's value creation is not only a research field, can be also an important assessment both for industry and port's managers in order to sustain and develop location-specific advantages (an asset to match with firm-specific assets and internalize – Dunning, 2000).

Even when the world economy was dealing with the financial crisis, after Lehman Brothers fall, *The Economist* (2009, Nov. pp.1) has written: “Brazil takes off”. However to sustain the ‘flight’ value links must be aligned, even when are not controlled or integrated.

2. GLOBAL VALUE CHAIN, LOCATION-SPECIFIC ASSETS AND MARITIME PORTS

For several countries, the attraction of FDI is a key issue in order to promote economic growth, employment and to capture knowledge spillovers from MNCs investments. Countries like Popular Republic of China (PRC), India, Brazil, among others, are disputing new MNCs investments, trying to capture a ‘slice’ of the value chain (e.g. Buckley, 2002). Buckley (2009, pp. 133) was clear when has stated: “Managers in companies with global operations have learned to ‘fine slice’ their activities and to locate each “stage” of activity in its optimal location and to control the whole supply chain, even when not owning all of it.” The same author, with Casson (Buckley, Casson, 2011), again, taking another step forward in this field, in a way which has began in the 70’s (Buckley, Casson, 1976), stresses the need of activities coordination, in an intra-firm or even inter-firm context, following hierarquical or quasi-hierarquical approaches. A global value chain where facilities located in different countries (Klein, 1989) are connected by goods and information flows, as linkages which should be efficient in order reduce internal or external transaction costs (Buckley, Hashai, 2004). Buckley and Casson (2011) were quite explicit when have referred the Coase’s (1937) contribution as a cornerstone in order to develop the internalization theory as an internationalization business theory.

Furthermore, Schmitz (2004) has pointed out, in the wake of the work developed with Humphrey (Humphrey, Schmitz, 2002), the risk of supplier failure as an issue which needs to be overcome, and a captive network as a typology of value chain governance that would allow control and coordination (in a quasi-hierarchy governance approach).

Both, internalization theory and global value chain approach, highlight the need of coordination, and stressed the operational costs of this coordination as an issue which should be considered when is defined the value chain governance typology. Nevertheless, internationalization theory suggests “that location and ownership of facilities govern the costs of supply chain operations” (Buckley, Casson, 2011, p. 500). Furthermore, these costs are subdivided into two different parts: facilities and linkages, where a specific location – a country or region in the global value chain – would contribute with inputs (labor, capital and land) and linkages. From this perspective coordination will be crucial in order to use different inputs in each country and to create the most efficient linkages between facilities. Buckley and Casson (2011) consider among these operational costs of linkages the costs of transportation (Figure 1)

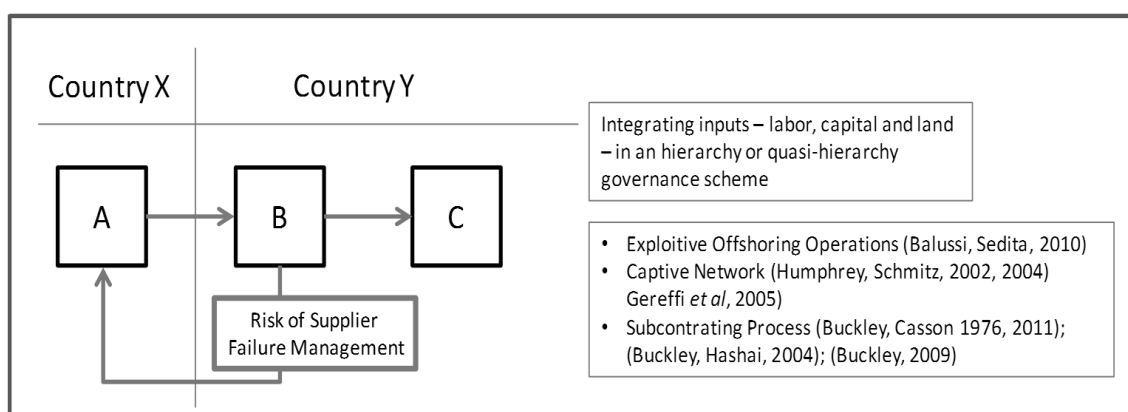


Figure 1: Global Value Chain in a Hierarchy or Quasi-Hierarchy Governance Scheme in Exploitive Offshoring Operations

Thus, based on Humphrey and Schmitz (2002, 2004) and Gereffi (2005) global value chain approach, and in Buckley and Casson’s (1976, 2011) internalization theory, emerged a set of coordination activities, which includes the performance of transport activities, among others, as ties, or links, that support the upstream to downstream flow.

Buckley (2009, p. 135) has made an important contribution when mentioned three conditions which should occurred in order to produce the fragmentation of the value chain (or the global factory as was defined by Buckley (2009)): "(a) there are technological discontinuities between different stages, (b) the stages are characterized by different factor intensities, and, (c) the cost of coordination and transport are sufficiently low to make the process economic (Deardoff, 2001)."

Thus, those linkages within the global value chain shall be effective and efficient; if not, the process will not be economic, and a location-specific asset, as can be natural resources or labor costs, would be damage. An MNC will not get from that location (country/region) all the value that would be possible to get; as a location – a country or a region – will not be able to explore all the resources that can be a source of inward FDI or other quasi-hierarchy governance typology (e.g. licensing with controlled processes) which will allow exports from that location to other facilities, downstream in the value chain.

Dunning (1977, 1998, 2000 and 2001) when has presented location sub-paradigm of the eclectic paradigm mentioned several different approaches to the question: where FDI – MNCs' investments abroad – should be located? Dunning (2000, p. 175) has mentioned as important issues: "(...) e.g. exchange rate and political risks, the regulation and policies of supra-national entities (WTO), inter-country cultural differences; (...). However, these add-on or re-valued variables could be easily accommodated within the extant analytical structures". And within these analytical structures we shall consider wage levels and, among other issues, supply capabilities and infra-structures. Among the group of infra-structures we can find maritime ports.

According to WTO (2010), international trade, in 2009, decreased 12%, and cargo volume transported by containerships fell dramatically. Shipping industry supported the value chains redesign, and maritime transport has been the backbone of the development of international trade (UNCTAD in RMT, 2008). A quite tight relation between international trade (and FDI) and maritime transport is being stated by different authors and institutions.

As well as international business theorists, micro economists, which focused on endowment factors (Ohlin, 1933), and, later, on scale economies and monopolistic competition (Krugman, 1979, 1991, 1998), as the main variables explaining international trade, have agreed that maritime transport has become a key issue in order to create and sustain a country/region competitive advantage.

McCann (2005, p. 305) noted that "geography and space are introduced in the new economic geography in the form of the function of the iceberg transport costs, in which part of the deliverables are consumed by the act of transportation." This concept of iceberg, introduced before by Samuelson (1952), reflects the impact of transport on trade, and particularly on international trade. Sanchez et al (2003) stressed this point by stating: "Econometric estimates suggest the doubling of an individual country's transport costs leads to a drop in trade of 80% or even more." (Cited in Hummels, 2000; Limão et al, 2001 in Sanchez et al, 2003, pp. 200).

The size of this iceberg is not measured only in distance units (kilometers or miles), but also considering the efficiency produced by other actors. Gries *et al* (2008) published a research paper entitled "The Optimal Distance to Port for Exporting Firms" which concluded that location of exporting firms - particularly manufacturing - is close to the ports as a link to key foreign markets. Fink *et al* (2002, pp. 101), referring to the publications of the OECD (1968) and Livingston (1986) has given an important contribution, when underlined: "the evidence suggests that the ocean leg contribute a little more than a third of the total cost door-to-door."

Transport costs and trade volumes depend on geography (distance), infrastructure (density markets origin/destination), administrative barriers and the structure of the shipping industry (Limão, Venables, 2001). Limão and Venables (2001) published these conclusions in *The World Bank Economic Review*, in 2001, which are an illustration about the importance of infrastructure in transport costs: results from the application of econometric methods concluded that the "deterioration of infrastructure (and density) of the median to the 75th percentile increases the costs (...) in an amount equivalent to 3466 km of travel by sea or land travel of 419 km. (...) The impact on the volume of trade (international) is equivalent to an additional distance of 1627 km." (Limão, Venables, 2001, pp. 470).

Confirming this perception, Martinez-Zorzoso and Nowak-Lehmann (2004) studied the 'new' trade generated by the variable 'geographical distance', following the classification of Hashai and Hirsh (2000), and in addition introduced the concept of 'economic distance'. Exploring the MERCOSUR exports to the EU and adopting the concept presented by Bougheas *et al* (1999), and assuming shipping costs as a function of 'geographic distance' and 'public (transport) infrastructure', have shown a positive relation between the latter and the volume of international trade (Slack *et al*, 2002).

Fink *et al* (2002), on the other hand, shows a broad perspective of the shipping costs. Based on the definition of GATS (General Agreement on Trade in Services) provide three sets of activities within the maritime transport services: international shipping (international route between the ports), maritime auxiliary services (MAS – cargo handling, temporary storage of cargo, among others), and port services (pilotage, waste collection, etc.).

Thereby, with the reduction of tariffs – after de Marrakech Conference, in 1994, and the creation of WTO in 1995 – geographical distance, and its impacts on shipping costs, and within these, those related with MAS, in the lexicon of GATS, becomes a central element to ensure exports competitiveness, and FDI attraction, in a global marketplace. In this perspective, linkages to incorporate countries and regions in the global economy rely on an efficient transport process, which includes not only the operation made by road, rail, air and maritime operators, but also on other operations inside the hinterland, and among them those performed within the perimeter of port's terminals. Within this set of services we should give special attention to maritime auxiliary services (MAS) that emerge as final support to the logistics process, and are a key element non-integrated or non-controlled in a hierarchy or quasi-hierarchy value chain governance typology (Paixão and Marlow, 2003, Bichou and Gray, 2004, Martinez-Zorzoso and Nowak-Lehmann, 2004, Song and Panayides, 2007, Panayides and Song, 2008 – Figure 2).

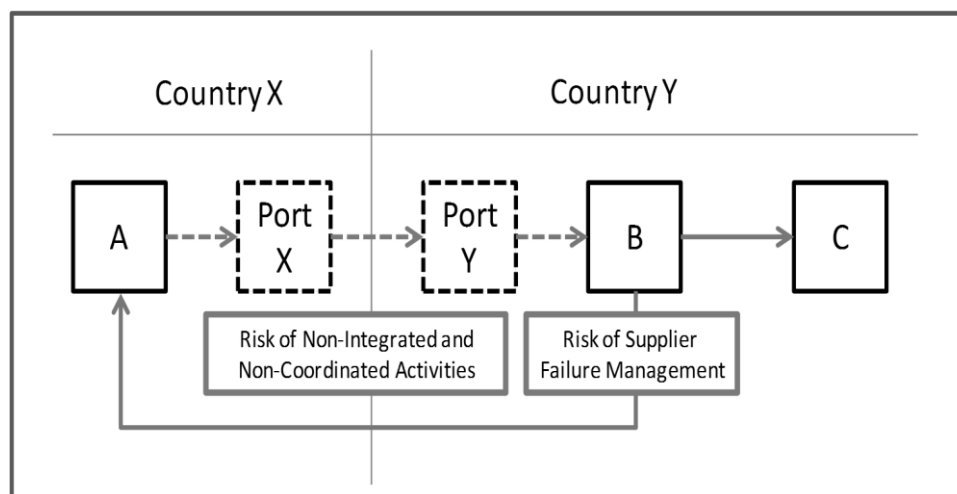


Figure 2: Global Value Chain in a Hierarchy or Quasi-Hierarchy Governance Scheme in Exploitive Offshoring Operations and Non-Integrated and Non-Coordinated Value Chain Activities

Nevertheless, the question that emerges lies - and it is our purpose – on: which are the value dimensions of port's service and how these variables are being assessed by the footwear industry (São Paulo – Brazil). A research gap is identified, mostly because it is seen a new approach to the integration of port's terminals operations – maritime auxiliary services (MAS), in GATS lexicon as we mentioned above – in global value chains, which from a hierarchy or quasi-hierarchy governance typology are looking for resources, in order to have an exploitive offshoring approach, and do not control, or even coordinate with some level of control, port's operations. The integration is needed; but integration (and some level of coordination) only can be produced if industry value perception is known by the port's terminals managers, and if with that information they will design and perform operations which will enhance location-specific assets (Figure 3).

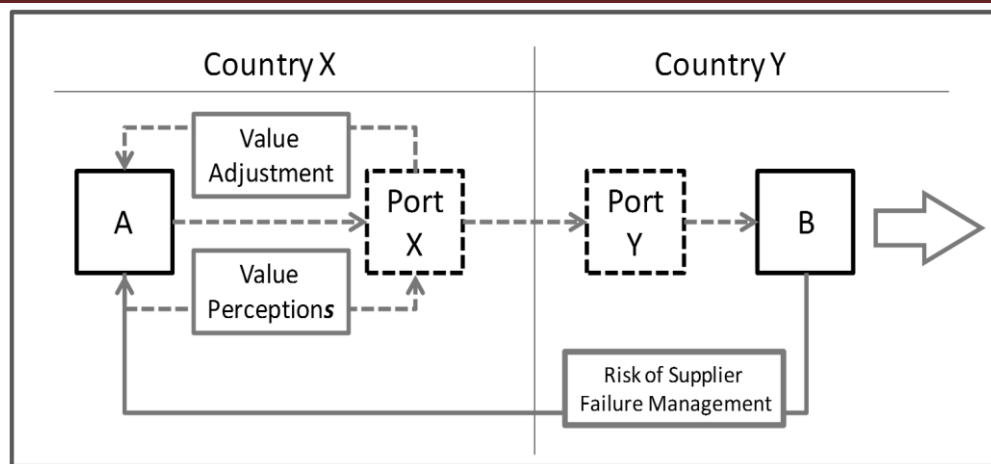


Figure 3: Port's Value Adjustment Based on Industry's Value Perceptions – Integrating Auxiliary Maritime Services on Global Value Chain

3. PORT'S MAS VALUE DIMENSIONS: WHICH VARIABLES SHALL BE CONSIDERED TO ADD VALUE?

Port's performance is not the unique part of the logistics chain, in the hinterland, that is not controlled by the MNCs in a hierarchy or quasi-hierarchy governance typology, as it is the captive network suggested by Humphrey and Schmitz (2002, 2004), or even in the case of a subcontracting operation as it was mentioned by Buckley and Casson (2011). Krugman (1991, 1998), among others, have pointed out the new role of transport in the new trade promoted by the intra-firm (and intra-industry) flows, i.e. within the global value chain. Although, transport, also includes, in a broader perspective, other infra-structures, as roads density, airports, railways, among others (Limão, Venables, 2001; Martinez-Zorzoso, Nowak-Lehmann, 2004; Alonso-Villar, 2005). Those infrastructures are not controlled and are also part of the linkage within the global value chain.

However, if transport infrastructures are important, operation is performed by transport subcontractors, or even by logistics service providers, in a market-based governance typology (Coase, 1937). In both cases a contractual approach would allow control over the operation, and market, in this context, usually works promoting value offer adjustment to demand requirements.

Nonetheless, this doesn't occur when we focused on MAS. These services are performed by container terminal's operators, usually in a monopoly or oligopoly market structure. The linkage between hinterland and foreland is performed by an operator (a state owned enterprise – SOE – or a private company as a concessionaire of the port's public service), which serves local economy and shipping lines at port's perimeter.

The contribution of MAS to the linkage effectiveness and efficiency is important, and therefore to promote local competitiveness; thus, value, for local companies, which are owned by MNC, or are integrated in global value chains, in a quasi-hierarchy governance typology, it is seen in a scope, which includes: (P1) MAS contribute to enhance local competitiveness?; and (P2) MAS are easily integrated into local companies operations?

3.1. (P1) MAS contribute to enhance local competitiveness?

Limão and Venables (2001), Sánchez *et al* (2003), Paixão and Marlow (2003), Bichou and Gray (2004), Martinez-Zorzoso and Nowak-Lehmann (2004), Song and Panayides (2007) and Panayides and Song (2008) were authors which has published focusing this topic, and how ports would add value and enhance local competitiveness.

Most of them focused on supply chain ports' integration, and logistics management objectives: turn available products (goods) in the right place, at the right time and right quantity, adding value whenever "the perceived benefits outweigh the sacrifices (also) perceived" (Lambert *et al*, 2000, pp. 4). Andraski and Novak (1996, pp.25) have mentioned: "Integrating the logistics operations of the supplier and the customer into one

coordinated the logistics effort," reaching out "to long term competitive advantage" (Paixão and Marlow, 2003; Song and Panayides, 2007, Panayides, Song, 2008).

MAS contribution to enhance local competitiveness is seen in triple perspective: cost, time and level of service (easy to use/ to be served) (Robinson, 2002). For local companies MAS are seen as an additional cost (Deardorff, 2001; Buckley, 2009; Buckley, Casson, 2011), part of the linkage lead-time (between facilities within the global value chain), and other service features.

3.2. (P2) MAS are easily integrated into local companies operations?

If control over operation is not possible, the service must be predictable (information about process), and at same time must be performed in a context – infrastructure – where goods are handled properly and adequate transport mode inter-connectivity is provided (Notteboom, Rodrigue, 2005). Regarding this issue, considering a hierarchy or quasi-hierarchy governance typology, local companies shall consider bureaucracy, information, and infrastructures as key elements in order to get from port's operation a reduction of transaction costs and risk of supplier failure (Humphrey, Schmitz, 2002, 2004; Buckley, 2009; Buckley, Casson, 2011).

In this topic Paixão and Marlow (2003), Marlow and Paixão (2003), Song and Panayides (2007), and Panayides and Song (2008) have focused their research on ports' integration in the supply chain, mainly looking to this topic from ports' managers perspective. Nonetheless, our research is focused on clients' value perception, and mainly those which exports are integrated in global value chains. Their perception about port's operations in order to reduce their risk as suppliers is a key issue in order to sustain their competitiveness and to be part of global value chains (Deardorff, 2001; Humphrey, Schmitz, 2002, 2004; Gereffi *et al.*, (2005); Buckley, 2009; Buckley, Casson, 2011).

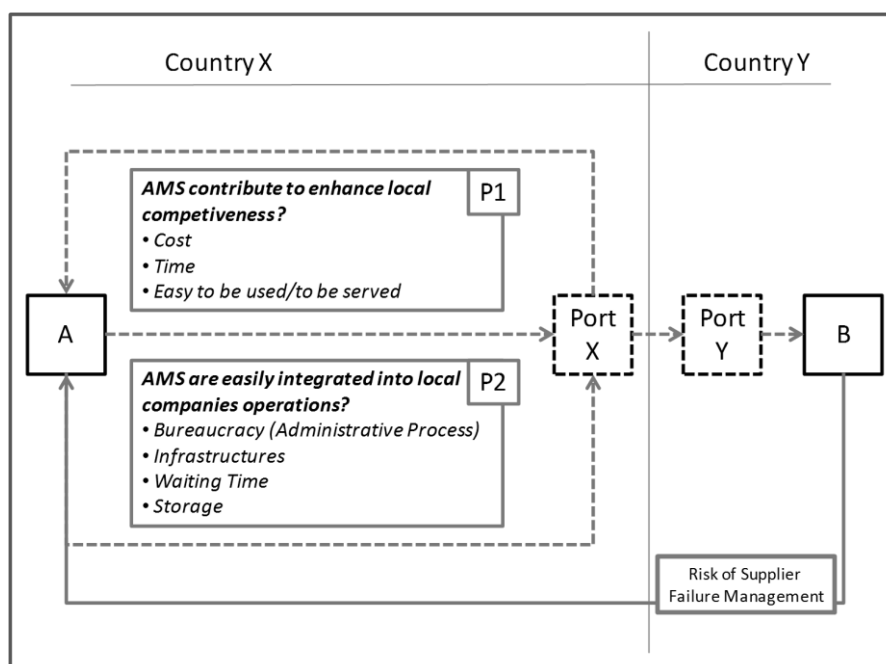


Figure 4: Port's Value Adjustment Based on Industry's Value Perceptions – Integrating Auxiliary Maritime Services on Global Value Chain

4. PORT OF SANTOS AND FOOTWEAR INDUSTRY OF THE SÃO PAULO REGION (BRAZIL): THE CONTEXT WHERE RESEARCH WAS CONDUCTED

The ancient Port of São Vicente, which from 19th century, after the independence of Brazil, was renamed Port of Santos, is the first port in Latin America. Between 2000 and 2010, the Port of Santos almost double the cargo handled, and reaches 93 million tons. It is the most important link connecting Brazilian economy to foreign markets, with a share around 25% of products traded, with balanced inbound/outbound flows.

The mix of products handled is diverse, where there are approximately 20% of liquid bulk, dry bulk 40% and 40% of general cargo. In these 40% of general cargo we would highlight the growing weight of container cargo, which in the first six months of 2010 reached 1,2 million TEUs, and approximately 13 million tons.

The main foreign markets served by the Port of Santos, in the first half of 2010, were the People's Republic of China (24,1%), Netherlands (7%), the Russian Federation (4,6%) the United States of America (4,2%) and India (3,8%).

However, this growth is facing difficulties in order to sustain this trend. Paulo (2007, pp.2) stressed "(...) the main difficulties to ship products overseas from the Port of Santos relate to frequent congestion in the access terminal in the arrival of the truck to the (terminal), fines, thefts and cargo robberies. " Physical constraints shall be removed, and are being removed, in order to receive post-panamax vessels. In order to solve this constraint, the port authority is implementing an ambitious dredging project.

Despite the increased productivity (ABRATEC, 2008), clients of the Port of Santos still see terminal operation as an obstacle to their efficiency. Vernimmen *et al* (2007), in an article published in *Economic & Maritime Logistics*, allude to an average of three days, with a variance of one day, as the time required to perform terminal services at the Port of Santos, including here the waiting times between tasks (from receiving until the final cargo boarding process into the ship). For example, the Port of Elizabeth, South Africa, for the same activities, consumes in average one day, with a variance of an half day (0,5). This difference has an impact on the operations' efficiency that are served by the Port of Santos, and is an illustration of the gap which needs to be overcome in order to enhance the Brazilian economy competitiveness (particularly in the case of São Paulo region).

Regarding the footwear industry, the second largest economy in the Americas exported 166 million pairs of shoes to a group of over 140 foreign markets. It is also important to note the Brazilian economy exports each pair of shoes at an average price of \$ 11,35 with an annual export value of 1,9 billion USD. In the State of São Paulo we can find more than 2 700 footwear companies, which have created more than 52 000 jobs: 20 jobs per company in average. The São Paulo region footwear exports are made with a higher average price (\$17,13) comparing with the Brazilian average of \$11,35). With a contribution of more than 10% of Brazilian footwear exports, this industry at São Paulo region, according to ABICaçado (2008), is concentrated in three clusters, with a fourth emerging one. The four cluster areas are: Franca, Birigui, Jaú and Santa Cruz do Rio Pardo.

5. METHOD

The methodology applied, considering the purpose of our research, was, as first step, an approach to global value chain concept, and MNCs governance alternatives, focusing on hierarchy and quasi-hierarchy typologies. It is focusing on the impacts of these global value chains on the maritime transport, and, before on international trade, that we can understand the contribution of the port's service in order to ensure effective and efficient linkages within the global value chain. Based on this approach we have developed the notion of ports' value dimensions, and following a hypothetical-deductive approach - logical empiricism of the Vienna Circle and Popper falsionism - we have deducted variables, as research propositions. Afterwards, we will apply quantitative methods – multivariate (Principal Components Analysis and Cluster Analysis) and bivariate (Crosstabs and Chi-Square Tests) statistics – in order to verify if, in our sample, these propositions are valid.

A survey was designed exclusively for this study. The questionnaire was tested, having been interviewed a number of companies, ensuring the consistency of the document, removing doubts and tuning the lexicon. Three control questions were made in order to ensure validity: if companies know, or not, Port of Santos tariffs; if companies know, or not, how many time takes the boarding operation (operation within container's terminal); and, if companies can compare container's terminal of Port of Santos service with other ports' service. A Likert Scale, from 1 – Completely Disagree to 5 – Completely Agree was used.

The sample was taken considering the following steps: 1) analysis of information published by the Brazilian Federal Government, to identify the location of the largest Brazilian footwear clusters, 2) selection of the State of Sao Paulo, because Port of Santos is considered, or identified by CODESP - Dock Company of São Paulo –

Santos (2010), as the largest port in Latin America, and 3) random selection of 180 companies (SMEs) of the four largest footwear industry spatial agglomerations - Franca, Santa Cruz do Rio Pardo, Jaú and Birigui .

A group of 115 companies have responded, which means a response rate of 63.9% (Table 1). The number of respondent companies has, in 87,8%, turnovers below \$ 300 000 (Table 2).

| Cluster | N | Percent | Cumulative Percent |
|--------------|-----|---------|--------------------|
| Birigui | 33 | 28,7 | 28,7 |
| Franca | 36 | 31,3 | 60,0 |
| Pardo | 24 | 20,9 | 80,9 |
| Jaú | 22 | 19,1 | 100,00 |
| Total | 115 | 100,0 | |

Table 1 –Companies by Cluster (Sample) – Footwear Industry of State of São Paulo (Brazil)

| Turnover | Frequency | Percent | Cumulative Percent |
|--------------|-----------|---------|--------------------|
| < \$100 000 | 15 | 13,0 | 13,0 |
| < \$200 000 | 41 | 35,7 | 48,7 |
| < \$300 000 | 45 | 39,1 | 87,8 |
| > \$300 000 | 14 | 12,2 | 100,0 |
| Total | 115 | 100,0 | |

Table 2 –Turnover (Ranges – Sample) – Footwear Industry of State of São Paulo (Brazil)

6. DATA ANALYSIS AND RESULTS

In order to define latent variables which could consider the impact of MAS on the effective and efficiency of linkages within the global value chain (Humphrey and Schmitz, 2002, 2004), or global factory as it was called by Buckley (2009), a Principal Component Analysis (PCA) was developed. Two components were extracted based on Kaiser’s Method (Eingenvale equal or higher than one) and Varimax Rotation – Table 3 – and, together, explains 59,938% of the variance.

| Component | Initial Eigenvalues | | | % of Variance | Cumulative % | % of Variance | Cumulative % |
|-----------|---------------------|---------------|--------------|---------------|--------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | | | | |
| 1 | 2,906 | 41,521 | 41,521 | 41,521 | 41,521 | 35,434 | 35,434 |
| 2 | 1,289 | 18,417 | 59,938 | 18,417 | 59,938 | 24,503 | 59,938 |

Table 3 –Principal Component Analysis

Note: KMO: 0,751; H0 Bartlett’s Test of Sphericity Rejected: Aprox. Chi-Square = 194,428; Sig. 0,000

First component explains 35,43% of the variance, and considers questions, as measures, where the service features (how to approach MAS to be served?), THC (Terminal Handling Charge), waiting time to cargo boarding, and storage costs at container’s terminal are considered (Table 4 – Cronbach’s alpha 0,751). This first component is a latent variable which considers questions, as measures, following Churchill (1979) and Song and Panayides (2007) approach, of our first proposition (P1) MAS contribute to enhance local competitiveness?

Additionally, second component explains 24,503% of the variance, and considers questions as bureaucracy perception, terminal’s infrastructures and, again, as it was in the first component, waiting time to cargo boarding, and storage costs at container’s terminal (Table 4 –Cronbach’s alpha 0,657). The second component is a latent variable which considers questions, as measures, once again following Churchill (1979) and Song and Panayides (2007) approach, of our second proposition (P2) MAS are easily integrated into local companies operations?

| Rotated Component Matrix | | |
|---|--|--|
| Questions | Component | |
| | AMS contribute to enhance local competitiveness? | Are AMS easily integrated into local companies operations? |
| Your company knows how to approach Port of Santos containers terminals in order to be served? | ,818 | |
| Port of Santos containers terminals present a competitive THC (compared with other Brazilian container terminals)? | ,728 | |
| Port of Santos containers terminals have improved efficiency in last years (recent past)? | ,672 | |
| Port of Santos containers terminal present a better waiting time to boarding than other Brazillian ports? | ,625 | ,481 |
| Port of Santos containers terminals present a competitive inventory buffer storage cost? | ,596 | ,459 |
| Port of Santos infrastructures are adequate to perform cargo handling and boarding operations efficiently? | | ,846 |
| The process to deliver cargo at a container terminal is client friendly and is not burocratic (several and redundant stages)? | | ,730 |

Table 4 –Rotated Component Matrix (Varimax Rotation)

Note: score loadings less than 0.4 are not shown

An analysis made by component has shown, considering our sample, a negative clients' perception in both value dimensions: in the first component 1,92; and, in the second 1,90. We shall highlight the negative perception about THC competitiveness (1,22) and increasing efficiency over time (1,86) in the first component, and bureaucracy (administrative process) (1,41) and infrastructures in the second component (1,70) (Table 5 and Table 6).

| Value Dimensions | Questions | Average | Standard-Deviation | Average | Standard-Deviation |
|--|--|---------|--------------------|---------|--------------------|
| (P1) AMS contribute to enhance local competitiveness? $\alpha=0,751$ | Port of Santos containers terminals present a competitive THC (compared with other Brazilian container terminals)? | 1,22 | ,435 | 1,92 | 0,440 |
| | Port of Santos containers terminals have improved efficiency in last years (recent past)? | 1,86 | ,963 | | |
| | Your company knows how to approach Port of Santos containers terminals in order to be served? | 2,01 | 1,225 | | |
| | Port of Santos containers terminal present a better waiting time to boarding than other Brazillian ports? | 2,41 | 1,249 | | |
| | Port of Santos containers terminals present a competitive inventory buffer storage cost? | 2,10 | 1,162 | | |

Table 5 – (P1) MAS Contribute to Enhance Local Competitiveness?

Note: Likert Scale (1- Completely Disagree; 5 – Completely Agree)

| Value Dimensions | Questions | Average | Standard-Deviation | Average | Standard-Deviation |
|--|---|---------|--------------------|---------|--------------------|
| (P2) Are AMS easily integrated into local companies operations? $\alpha=0,657$ | The process to deliver cargo at a container terminal is client friendly and is not bureaucratic (several and redundant stages)? | 1,41 | ,605 | 1,90 | 0,439 |
| | Port of Santos infrastructures are adequate to perform cargo handling and boarding operations efficiently? | 1,70 | ,701 | | |
| | Port of Santos containers terminal present a better waiting time to boarding than other Brazillian ports? | 2,41 | 1,249 | | |
| | Port of Santos containers terminals present a competitive inventory buffer storage cost? | 2,10 | 1,162 | | |

Table 6 – (P2) Are MAS easily integrated into local companies operations?

Note: Likert Scale (1- Completely Disagree; 5 – Completely Agree)

Nonetheless, the negative perception about container’s terminals MAS at Port of Santos is different if we consider an analysis made by groups of companies, based on their turnover and the most important MAS feature which impacts on their competitiveness (Table 7).

| Which of the following issues has a major impact in your competitiveness? | Frequency | Percent | Cumulative Percent |
|---|-----------|---------|--------------------|
| Bureaucracy | 22 | 19,1 | 19,1 |
| Infrastructures | 49 | 42,6 | 61,7 |
| Storage Facilities & Cost | 27 | 23,5 | 85,2 |
| THC - Terminal Handling Charge | 17 | 14,8 | 100,0 |
| Total | 115 | 100,0 | |

Table 7 – Impact on Footwear SMEs Competitiveness

42,9% (N=49) of our respondents consider infrastructures as the most important issue which impacts on their competitiveness, and only 14,8% (N=17) have answered cost (THC). However, it was this last group which has shown a worse evaluation of MAS contribution to their competitiveness and, by other hand, it was the group which considers infrastructures who have done a better assessment (better but also negative) – Table 8.

| AMS contribute to enhance local competitiveness? | Bureaucracy (N=22) | | Infrastructures (N=49) | | Storage (N=27) | | THC(N=17) | |
|---|--------------------|---------|------------------------|---------|----------------|---------|-----------|---------|
| | Average | Average | Average | Average | Average | Average | Average | Average |
| Port of Santos containers terminals present a competitive THC (compared with other Brazillian container terminals)? | 1,14 | 2,01 | 1,33 | 2,10 | 1,19 | 1,75 | 1,06 | 1,56 |
| Port of Santos containers terminals have improved efficiency in last years (recent past)? | 2,32 | | 1,96 | | 1,63 | | | |
| Your company knows how to approach Port of Santos containers terminals in order to be served? | 2,00 | | 2,29 | | 1,85 | | | |
| Port of Santos containers terminal present a better waiting time to boarding than other Brazillian ports? | 2,59 | | 2,59 | | 2,15 | | | |
| Port of Santos containers terminals present a competitive inventory buffer storage cost? | 2,00 | | 2,31 | | 1,93 | | | |

Table 8 – Impact on Footwear SMEs Competitiveness and ‘MAS Contribute to Enhance Local Competitiveness?’ Note: Non-Parametric Kruskal-Wallis Test – Sig. 0,019; Likert Scale (1- Completely Disagree; 5 – Completely Agree)

Additionally, taking into account the second component, it is seen a difference between groups of turnover ranges: groups formed by, or containing, companies with a higher turnover show a worse perception of integration than those which present lower turnovers. A deeper analysis shows a reverse perspective only when inventory buffer storage cost is the topic asked (> \$300 000 – 2,36; < \$100 000 – 2,00 – Table 9).

| Are MAS easily integrated into local companies operations? | < \$100,000 (N=15) | | < \$200,000 (N=41) | | < \$300,000 (N=45) | | > \$300,000 (N=14) | |
|---|--------------------|---------|--------------------|---------|--------------------|---------|--------------------|---------|
| | Average | Average | Average | Average | Average | Average | Average | Average |
| The process to deliver cargo at a container terminal is client friendly and is not bureaucratic (several and redundant stages)? | 1,73 | 2,10 | 1,54 | 1,98 | 1,20 | 1,79 | 1,36 | 1,84 |
| Port of Santos infrastructures are adequate to perform cargo handling and boarding operations efficiently? | 1,80 | | 1,83 | | 1,64 | | 1,43 | |
| Port of Santos containers terminal present a better waiting time to boarding than other Brazilian ports? | 2,87 | | 2,46 | | 2,27 | | 2,21 | |
| Port of Santos containers terminals present a competitive inventory buffer storage cost? | 2,00 | | 2,07 | | 2,07 | | 2,36 | |

Table 9 – Turnover and ‘Are MAS Easily Integrated Into Local Companies Operations?’

Note: Non-Parametric Kruskal-Wallis Test – Sig. 0,033; Likert Scale (1- Completely Disagree; 5 – Completely Agree)

In order to define client segments a Hierarchical Cluster Analysis (HCA) was developed, using as discriminate variables the two components extracted. The HCA was developed considering Ward’s method and Squared Euclidean distance as measure. Three clusters were formed, grouping companies (Table 10 and Table 11):

- **Group 1 (N=59):** a set of companies which have the most negative value perception of container’s terminal MAS. 51,3% of our sample respondents considers: the linkage reduces the value of the local-specific assets (1,29); and, is not easy to integrate operations, because the bureaucracy, infrastructures, waiting time (within containers terminal) and the cost of storage do not allow the better fit among companies operations and terminal operations (1,44).
- **Group 2 (N=20):** a group of companies (17,4%) where we can find more units with higher turnovers (higher than \$200 000). This group presents a less negative perception when comparing with first group, although we shall stress that is this cluster which presents the most negative perception about infrastructures adequacy to cargo handling and boarding (1,05); on the other hand, these companies know how to be served (information about service features in order to be used as part of the linkage) (3,45).
- **Group 3 (N=36):** the last group (31,3%), where we can find – in proportion – more companies which presents lower turnovers, is the one who evaluate in a less negative way the MAS of the container’s terminal. In both dimensions: in the first considering a better waiting time than other Brazilian ports (3,53) and a competitive storage cost (3,14); and, in the second, presenting a better average in all variables that are part of this latent variable.

| AMS contribute to enhance local competitiveness? | Group 1 (N=59) | | Group 2 (N=20) | | Group 3 (N=36) | |
|--|----------------|---------|----------------|---------|----------------|---------|
| | Average | Average | Average | Average | Average | Average |
| Port of Santos containers terminals present a competitive THC (compared with other Brazilian container terminals)? | 1,00 | 1,29 | 1,75 | 2,56 | 1,28 | 2,58 |
| Port of Santos containers terminals have improved efficiency in last years (recent past)? | 1,31 | | 2,50 | | 2,42 | |
| Your company knows how to approach Port of Santos containers terminals in order to be served? | 1,19 | | 3,45 | | 2,56 | |
| Port of Santos containers terminal present a better waiting time to boarding than other Brazilian ports? | 1,64 | | 2,65 | | 3,53 | |
| Port of Santos containers terminals present a competitive inventory buffer storage cost? | 1,34 | | 2,45 | | 3,14 | |

Table 10 – Clusters and ‘MAS Contribute to Enhance Local Competitiveness?’

Note: Likert Scale (1- Completely Disagree; 5 – Completely Agree)

| Are AMS easily integrated into local companies operations? | Group 1 (N=59) | | Group 2 (N=20) | | Group 3 (N=36) | |
|---|----------------|---------|----------------|---------|----------------|---------|
| | Average | Average | Average | Average | Average | Average |
| The process to deliver cargo at a container terminal is client friendly and is not bureaucratic (several and redundant stages)? | 1,17 | 1,44 | 1,25 | 1,85 | 1,89 | 2,42 |
| Port of Santos infrastructures are adequate to perform cargo handling and boarding operations efficiently? | 1,61 | | 1,05 | | 2,22 | |
| Port of Santos containers terminal present a better waiting time to boarding than other Brazillian ports? | 1,64 | | 2,65 | | 3,53 | |
| Port of Santos containers terminals present a competitive inventory buffer storage cost? | 1,34 | | 2,45 | | 3,14 | |

Table 11 – Clusters and ‘Are MAS Easily Integrated Into Local Companies Operations?’

Note: Likert Scale (1- Completely Disagree; 5 – Completely Agree)

7. DISCUSSION

Our sample was built focusing on an industry which is exporting an important part of its production. Furthermore, this industry, footwear, uses resources that are abundant in Brazil (a natural resource – lather – and labor at competitive costs). These location-specific assets are included in global value chains, or in the global factory, through governance schemes which need integration or coordination. Linkages are crucial in order to produce efficiently considering each ‘slice’ of the value chain. Humphrey and Schmitz (2002) focused their attention on captive networks, and Buckley and Casson (1976, 2011) have developed the internalization theory, where new ways of control, within the global value chain, need new tools in order to coordinate facilities, and its operations, all over the globe. Local companies use ports’ services (MAS) in order to link their production to other value chain facilities abroad. In our case, the SMEs of our sample are using the Port of Santos as a part of their linkage within the footwear global value chain.

Even when hierarchy or quasi-hierarchy governance schemes are implemented in order to get control over local operations, port’s operations are performed in a monopoly or oligopoly market structure. From this perspective we can conclude that the linkage – or part of the linkage – is not integrated and is difficult to coordinate.

From port’s perspective, as it was developed by Marlow and Paixão (2003), Paixão and Marlow (2003), Song and Panayides (2007), and Panayides and Song (2008), the focus was more intense on how these infrastructures should integrate their activities into the supply chain. Paixão and Marlow (2003) have presented the port’s fourth generation. Nevertheless, shall be stressed, the perspective presented is always a view from the port’s perspective; and is not a perspective of the industry – the economic sector – about the port’s services.

Thus, our contribution is centered on the exporting company perspective, focusing on their participation on a global value chain, adding local-specific assets (resources), and using the port’s service as a part of the linkage: a linkage which can add, or not, value and enhance competitiveness to local resources; and a linkage where are performed operations – part of the transport process – which need to be coordinated in order to be reduced the risk of supplier failure, and to get an higher monitoring over the port’s service process.

Our results have shown two different – and orthogonal – latent variables: the first focusing on how MAS can enhance local resources competitiveness, and thus if adds value to local-specific assets (resources); and, a second, focused on how MAS can be integrated on local companies operations, and if, as a non-integrated segment of the global value chain, is adjusted to operational demand requirements. The combination of these two variables is the basis in order to develop a framework to classify the port’s MAS, from which different actors can decide and take actions in order to design the most effective and efficient global value chain.

Thus, four different classifications emerge from the combination of these two variables: ‘Poor and Non-Adjusted Linkage’; ‘Operational Adjusted Linkage’; ‘Value Added Non-Adjusted Linkage’; and, ‘Value Added Linkage’ (Figure 5).

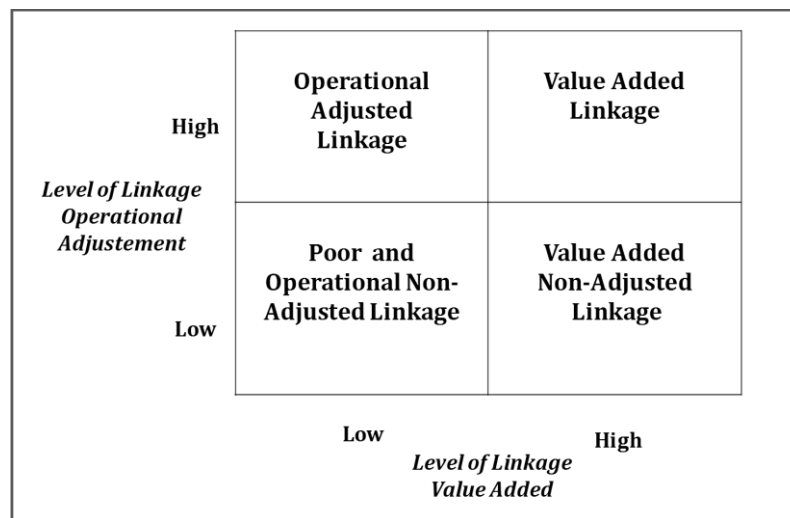


Figure 5: Framework of Port’s MAS Value Chain Contribution

- The first quadrant – termed as ‘**Poor and Operational Non-Adjusted Linkage**’ – is formed by a low level linkage value added and a low linkage operational adjustment. Local companies do not find the MAS as a part of the linkage which adds competitiveness to their production. Price (THC), service features (easy to approach in order to add port’s service features), waiting time to cargo boarding and storage costs within the terminal perimeter, are variables, in this case, which reduce the value of local resources and their integration into global value chains. Furthermore, operational activities are not adjusted to demand requirements, and causes disruptions and companies need to consume more resources in order to deal with bureaucratic processes, non-adequate infrastructures, long waiting time to boarding cargo into ships and additional storage costs within the container terminal.
- The second quadrant – termed as ‘**Operational Adjusted Linkage**’ – is formed by a combination where companies have positive assessment when the scope of evaluation is the operational processes in order to take cargo from the hinterland into the ship, but consider the value added by the port’s terminal low. This last evaluation is usually done in a comparative dimension, where ports’ costs, waiting time and service features are compared (e.g THC and service availability) with other solutions (e.g. other ports).
- The third quadrant – termed as ‘**Value Added Non-Adjusted Linkage**’ – results from combining a positive evaluation about costs, time and service features, but, at same time, a negative assessment when companies look to processes and infrastructures. In this case operational adjustment to operational demand needs is low, coordination is no easy, but costs, waiting time and service features are recognized by exporting companies.
- The fourth quadrant – termed as ‘**Value Added Linkage**’ – is that where the evaluation is positive in both dimensions. Port’s MAS would add value, enhancing local production competitiveness, and, on the other hand, processes and infrastructures are contributing in order to reduce the risk of supplier failure (easy to integrate).

Thereby, applying the framework to our results, based on Port of Santos containers terminal, and the footwear industry (a random sample of 180 SMEs, with 115 respondents), we shall classify the MAS as ‘Poor and Operational Non-Adjusted Linkage’. The score obtained using the measures of each latent variable were negative, less than 2, when the Likert scale used was from one – completely disagree to five – completely agree. Finally, the latent variables allow us a clients’ segmentation, and with that information we got additional insights about which kind of clients are receiving a service that fits better, or worse, with their needs. And it is

important to stress: if in average the Port of Santos clients have shown a negative assessment, more than 50% presents a score under 1,5 in both dimensions.

From our results we should take a conclusion: MAS at Port of Santos shall improve their value contribution to local companies' production, and a lot must be done in order to adjust processes (bureaucracy and waiting time) and infrastructures to demand requirements. This last issue is quite important to reduce risk of supplier failure in a part of the value chain in which MNCs, even wanting a control over operations, are not able to do it, because those activities are performed by port's operators in a monopoly or oligopoly market structure (public operators or private companies, as it is at Port of Santos, operating as concessionaires of public terminals).

8. IMPLICATIONS FOR MNCs, LOCAL EXPORTING SMEs AND TERMINAL PORT'S MANAGERS

MNCs are always looking to new resources in order to produce in a more efficient way. Those resources are labor and land (natural resources). However, after manufacturing, or production, products must be transported, and linkages between facilities worldwide are part of the global value chain. The framework developed should give to MNCs an additional tool in order to understand if ports' MAS will add, or will not add, value to local production. Some local-specific assets can be damage by a poor and non-adjusted linkage, and other solutions should be considered in order to ensure an effective and efficient global value chain.

On other hand, local exporting companies, which are part of global value chains, in a captive network or as subcontracted companies, in order to produce a part or a final product that shall be delivered in other facility abroad, know that a share of their contribution within the value chain depends on port's operations, and value added linkage can be a enabler in order to get new orders and new global partners. The framework would be a tool in order to pressure port's operators, requiring service improvements, and/or to analyze linkage alternatives (e.g. other ports).

Finally, terminal port's operators, and local governments, the framework should be a tool in order to improve and to assess the contribution of terminal's operations to local competitiveness. If port's activities are not competitive, to capture FDI and to integrate local companies into global value chains, other local resources should be 'down' pressured. For instance, wages should be lower in order to offset a lower MAS value contribution; if not, that location would be less competitive and will not attract investments in order to promote its development.

9. CONCLUSIONS

In 1998 Krugman has published in the *Journal of Economic Perspectives* a research where made an analysis of different economic textbooks and has found that no one had an entry for 'location', 'region' or 'space'. Nevertheless, as Krugman (1998) argue, location has become an important field of research since the beginning of the 90's. Something has changed, and from different perspectives and theories, local integration into global value chains became a context where many researchers have focused their attention (Buckley, Casson, 2011). WTO foundation in 1995, and the reduction of tariff barriers, gave a contribution in order to create this context; MNCs development and the inclusion of several emerging countries in global economy were two other main issues in order to promote location as a hot topic.

A global factory emerged, in which facilities are located all over the world, and where transport – and mainly maritime transport – is linking and giving unity to value chain. If "space is the final frontier", as it was stated by Krugman (1998, pp.161), maritime transport is being the vehicle to reach that frontier, integrating flows which crosses countries' boundaries. A fragmentation of the value chain needs efficient linkages in order to integrate resources that are spread in the globe (Gereffi, *et al*, 2005).

Therefore, port's operations are part of those linkages. And MAS at Port of Santos are part of the linkage, which takes products from Brazil to different markets. Thus, it is was our purpose to add knowledge giving awareness to which are the value dimensions of port's service and how these variables are being assessed by the footwear industry (São Paulo region, Brazil). Our results, based on a deductive methodology, have shown two non-correlated latent variables (principal components), which have led us to a framework where MAS value

contribution can be assessed considering dimensions like: level of linkage value added and level of linkage operational adjustment.

This classification framework applied to MAS at Port of Santos has given us as result a ‘poor and non-adjusted linkage’. An evaluation made based on a random sample of companies from the footwear industry of São Paulo region (Brazil).

Further steps forward should be taken, in order to go deeper in this research field: firstly, latent variables can be detailed and their reliability can be improved adding new questions or detailing more some of the questions included within each dimension; and, secondly, it would be important to test the framework considering other maritime ports and industries.

REFERENCES

- ABICalçados, Associação Brasileira das Indústrias de Calçados, (2008). *Estado de São Paulo: Pólos Produtores*, ABICalçados.
- ABRATEC, (2008). *Estatísticas dos Terminais de Containers de Uso Público*, ABRATEC – Associação Brasileira dos Terminais de Containeres de Uso Público.
- Alonso-Villar, O., (2005). The Effects of Transports Costs Revisited, *Journal of Economic Geography*, 5, pp. 589-604.
- Andraski, J., Novack, R., (1996). Marketing Logistics Value: Managing the 5 P's, *Journal of Business Logistics*, 17, 1, pp. 23-34.
- Antràs, P., Caballero, J. (2009). Trade and Capital Flows: A Financial Frictions Perspective, *Journal of Political Economy*, 117, 4, pp. 701-744.
- Belussi, F. Sedita R. (2010). Managing the fragmented value chain of global business: exploitative and explorative offshoring toward emerging market economies. In Devinney Timothy, Pedersen Torben, Tihanyi Laszlo (ed.) *The Past, Present and Future of International Business & Management (Advances in International Management, Volume 23)*, Emerald Group Publishing Limited, pp.399-429
- Bichou, K. Gray, R. (2004). A Logistics and Supply Chain Management Approach to Port Performance Measurement, *Maritime Policy and Management*, 31, 1, pp. 47-67.
- Bougheas, S, Demetriades, P., Morgenroth, E., (1999). Infrastructure, Transports Costs and Trade, *Journal of International Economics*, 47, pp. 169-189.
- Buckley, P., (2009). Internalization Thinking – From the Multinational Enterprise to the Global Factory, *International Business Review*, 18, 3, pp. 224 – 235.
- Buckley, P., Casson, M., (1976). *The Future of the Multinational Enterprise*, Basingstoke and London, Macmillan.
- Buckley, P., Casson, M., (2011). Marketing and the Multinational: Extending Internalization Theory, *Journal of the Academy of Marketing Science*, 39, pp. 492-508.
- Buckley, P., Clegg, J., Wang, C. (2002). The impact of inward FDI on the performance of Chinese manufacturing firms, *Journal of International Business Studies*, 33, 4, pp. 637-655.
- Buckley, P., Hashai, N. (2004). A Global System View of Firm Boundaries?. *Journal of International Business Studies*, 35,1, pp. 33–45.
- Chiarvesio, M., Di Maria, E., Micelli, S., (2010). Global Value Chains and Open Networks: The Case of Italian Industrial Districts, *European Planning Studies*, 18, 3, pp.333-350.
- CODESP, (2010). *Estatísticas do Porto de Santos*, CODESP – Companhia das Docas do Estado de São Paulo.
- Churchill, G. (1979). A Paradigm for Developing Better Measures of Marketing Constructs, *Journal of Marketing Research*, 16, pp. 64-73.
- Deardoff, A. (2001). Fragmentation Across Cones. In S. Ardnt and H. Kierzkowski (Eds.), *Fragmentation: New Patterns in the World Economy*. Oxford, University Press.
- Dunning, J. (1977). Trade, Location of Economic Activity and the Multinational Enterprise. In Ohlin, P. Hesselborn and P. Wijkman (Eds), *The International Allocation of Economic Activity*, (pp. 395-418). London: Macmillan.
- Dunning, J. (1998), Location and the Multinational Enterprise: A Neglected Factor?., *Journal of International Business Studies*, 29, 1, pp. 45-66

-
- Dunning, J. (2000). The Eclectic Paradigm as an Envelope for Economic and Business Theories of MNE Activity, *International Business Review*, 9, 2, pp. 163-190.
- Dunning, J. (2001). The Eclectic (OLI) Paradigm of International Production: Past, Present and Future, *International Journal of the Economics of Business*, 8, 2, pp. 173-190.
- Economic Intelligence Unit (EIU), (2011), *Country Data – Brazil*, The Economist Group.
- Fenestra, R. (2003). *Advanced International Trade: Theory and Evidence*, Princeton, Princeton University Press.
- Fink, C., Mattoo A., Neagu, I. C., (2002). Trade in International Maritime Services: How Much Does Policy Matter, *The World Bank Economic Review*, 16, 1, pp. 81-108.
- Gereffi, G., Humphrey J., Sturgeon, T., (2005). The Governance of Global Value Chains, *Review of International Political Economy*, pp. 78-104.
- Governo Federal do Brasil, (2008). *Aprendendo a Exportar Calçados*, Governo Federal do Brasil.
- Gries, T, Naudé, W, Matthee, M., (2008). The Optimal Distance to Port for Exporting Firms, *United Nations University – WIDE*, Research Paper 2008/32.
- Hirsh, S., Hashai, N., (2000). The Arab-Israeli Trade Potencial: The Role of Distance-Sensitive Products, *The International Trade Journal*, 14, 1, pp. 1-35.
- Hummels, D. (2000). *Have International Transportation Costs Declined?*, Mimeo, Chicago.
- Humphrey, J., Schmitz, H., (2002). How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters?, *Regional Studies*, 36, 9, pp. 1017-1027.
- Humphrey, J., Schmitz, H., (2004). Chain governance and upgrading: Taking Stock. In Schmitz, H. (ed), *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham, Elgar, pp. 349-381.
- Klein, S. (1989). A Transaction Cost Explanation of Vertical Control in International Markets, *Journal of the Academy of Marketing Science*, 17, pp. 253-260.
- Krugman, P. (1979). Increasing Returns, Monopolistic Competition and International Trade, *Journal of International Economics*, 9, pp. 469-479.
- Krugman, P. (1991). Increasing Returns and Economic Geography, *Journal of Political Economy*, 99, pp. 483-499.
- Krugman, P. (1998). Space: The Final Frontier, *Journal of Economic Perspectives*, 12, pp. 161-174.
- Lambert, D. M., Burduroglu, R., (2000). Measuring and Selling the Value of Logistics, *The International Journal of Logistics Management*, 11, Nº 1, pp. 1-17.
- Limão N., Venables A., (2001). “Infrastructure, Geographical Disadvantage, Transport Costs, and Trade”, *The World Bank Economic Review*, 15, 3, pp. 451-479.
- Livingston, I. (1986), *International Transport Costs and Industrial Development in Least Developed Countries*, Iss. 616, UNIDO, Vienna.
- Marlow, P. B., Paixão A. C., (2003). Measure Lean Ports Performance, *International Journal of Transport Management*, 1, pp. 189-202.
- Martínez-Zorzoso, I., Nowak-Lehman, F. D., (2004). Economic and Geographical Distance: Explaining Mercosur Sectorial Exports to the EU, *Open Economies Review*, 15, 291-314.
- McCann, P., (2005), Transport Costs and New Economic Geography, *Journal of Economic Geography*, 5, pp. 305-318.
- Notteboom, T., Rodrigue, J-P. (2005). Port Regionalization Towards a New Phase in Port Development, *Maritime Policy and Management*, 32, 3, 297-313.
- OECD (1968), *Ocean Freight Rates as Part of Total Transport Costs*, OECD, Paris.
- Ohlin, B. (1933). *Interregional and International Trade*, Harvard University Press (Revised Edition 1967).
- Paixão, A. C., Marlow, P. B., (2003). Fourth Generation Ports -. a Question of Agility?, *International Journal of Physical Distribution & Logistics Management*, 33, 4, pp. 355-376.
- Panayides, P., Song, D-W, (2008). Evaluating the Integration of Seaport Container Terminals in Supply Chains, *International Journal of Physical Distribution & Logistics Management*, 38, 7, pp. 562-584.
- Paulo, M., (2007), Investimento em Logística Aumenta a Competitividade do País, Julho/Agosto, *Revista Inovação* in www.revistainovacao.uniemp.br (20/08/10).
- Robinson, R., (2002). Ports as Elements in Value Driven Chain Systems: The New Paradigm, *Maritime Policy and Management*, 25, pp. 21-40.
-

-
- Samuelson, P., (1952). The Transfer Problem and Transport Costs: The Terms of Trade When Impediments are Absent, *Economic Journal*, 62, pp. 278-304.
- Sánchez, R., Hoffmann, J, Micco, A, Pizzolitto, G., Sgut, M., Wilmsmeier, G., (2003). Port Efficiency and International Trade: Port Efficiency as a Determinant of Maritime Transport Costs, *Maritime Economics and Logistics*, 5, pp. 199-218.
- Schmitz, H. (2004). Local Upgrading in Global Chains: Recent Findings, *Proceedings of Summer Conference of Industrial, Dynamics, Innovation and Development*, Elsinore, Denmark, pp. 1-7.
- Slack, B., Wang J. J., (2002). The Challenge of Peripheral Ports: an Asian Perspective, *GeoJournal*, 56, pp. 159-166.
- Song, D.W, Panayides, P.M., (2007). Global Supply Chain and Port/Terminal: Integration and Competitiveness, *Proceedings of the International conference on Logistics, Shipping and Port Management*, Taiwan, pp. 1-14.
- The Economist, (2009). Brazil Takes Off, November, *The Economist Group*.
- UNCTAD, (2008). *Review of Maritime Transports*, United Nations (UN), New York and Geneva.
- Vernimmen, B, Dullaert, W., Engelen, S., (2007). Schedule Unreability in Liner Shipping: Origins and Consequences for the Hinterland Supply Chain, *Maritime Economic and Logistics*, 9, 3, pp. 193-213.
- World Bank, (2009) in The Economist, (2009), “Brazil Takes Off”, November, *The Economist Group*.
- WTO – World Trade Organization, (2010), *Statistics Database*, WTO.