

**THE PUBLIC-PRIVATE ENVIRONMENT IN THE DECISION MAKING PROCESS
REGARDING THE PORTUARY OPERATION IN BRAZIL: A CASE STUDY**

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Abstract

The present study seeks to evaluate the public-private relationship in the company decision making process, aiming at analyzing the export process under the perspective of the decisions oriented to the transaction cost management in the company and the ones of public matter. Although the transaction costs are high among the researched port alternatives, the ship's frequency and the facilities of complementary and bureaucratic services imply greater relative costs of not operating in Santos.

1. INTRODUCTION

There seems to be a consensus among specialists that the transport services are vital to an economy because they affect the almost totality of the economic activities, and also assume a sense of utility as a public good and, therefore, the dimension of a problem to be faced and managed by the public entity (Winston, 1985).

The increasing acknowledgement of the importance of the transport decisions for the logistics performance is one of the most relevant transformations of the latest decades, as it implies in considering the transport not as “derived demand”, in the neo-classic tradition, but as explicative variable of the management decision, and in recognizing that de transport decisions assume relevant trade-offs with other logistics functions and processes (for example, inventory, warehousing, purchase) and directly affect the outcomes of the logistics services and costs. In the public-private relationship, this implies that the transport begin to be incorporated as a logistics variable that influences the total cost and the location decision (Hesse & Rodrigue, 2004) and as a parameter of accessibility, which defines the operation costs of the economic systems (Rietveld & Vickerman, 2004).

Seeking to evaluate this public-private relationship in the decision making process in the present article, it is presented the case study of Belgo Bekaert Arames – BBA, a manufacturing company of wires and derivatives, the biggest Brazilian exporter in this field, that performs in the national and international markets. The focus of the analysis relies on the decision making process on the volumes to be exported, aiming at describing and evaluating this process under two perspectives: decisions oriented to the transaction cost management in the company, and others of public matter, such as operational inefficiencies caused by the public management of the alternative logistics sets, specifically, of alternative ports for the exporting process of the company.

Since its foundation, in 1921, Belgo has been part of the Arbed Group (Luxemburg) and, in 2002, it has begun to integrate one of the biggest steel metallurgy groups of the world, Arcelor, result of the union of Arbed, Usinor (France) and Aceralia (Spain). In 2004, Arcelor produced 47 million tons of steel and achieved revenue of 30 billion euros, employing around 95 thousand people in more than 60 countries. BBA is, therefore, a big size company in the wire sector that maintains national leadership in the steel wire manufacturing and that is present in the American, European, Asian, African and Oceanic markets.

2. FREIGHT TRANSPORT PROSPECTS IN BRAZIL

The historical development of the transport infrastructure in Brazil was imposed by the demand of the economic activities, without having its use determined as a public planning. In the XIX century the implantation of the railroads aimed at the logistics conditions for the sugar exploitation and, later on, the coffee exploitation.

The XX century is characterized as the Railroad Era in Brazil, since the railways prevailed among the transport systems in the country and, consequently, in the freight transport matrix. Part of the problem, regarding this excessive dependence on this modal, succeeds from the political orientation in conceiving the railroads as an accelerating factor of the development process in the country, responding to the demands required by the import substitution process and made official in the Air National Plan (1951) and in the Goals Plan (JK government), filling the gaps of the efficiency and capillarity requirements left out by the railway and cabotage systems. According to Castro (2004), proving such evaluation, the total paved road network improved considerably in the country for the last 50 years, growing from 3,133 km in 1956, to 12,703 km in 1960 (nowadays, 164,988 km).

However, besides the structuring of the high territorial reach road system, the roads had little success in the integration of the regional economies. The investments were much more concentrated in the geographical space around the main economic center, São Paulo, considering the existing or prognosticated bottlenecks. Even because, according to Galvão (1996), the agro-export model, concentrating and excluding, imposed to the other regions, distant from this economic center, the problem of the low traffic density by area unit, not justifying the application of public resources in the transport system, without a strategic planning of investments. As a result of this process, the country deals with the upsetting situation of a regional unevenness in the transport infrastructure provision, followed by a regional unevenness in the income (Barros e Raposo, 2002).

The current situation of the Brazilian economic infrastructure is greatly attributed to the lack of investments in other sector considered as strategic for the country, as well as the

governments' incapability in financing its investments. Not surprisingly, the investments in infrastructure is falling since the second half of the 1980's decade.

It is also known the fact that, historically, the transport system development did not follow the infrastructure needs to support the productive investments in Brazil. In the case of Brazil, these difficulties have special characteristics because of the serious deficiencies in the transport system. As a general rule, the country has had the same size of rail network for the last 80 years; only a small number of roads are surfaced (approximately 10%) and, according to the National Confederation of Transport Companies (CNT), most of these are in a precarious state of repair; the railways provide a slow service with low productivity, using a network that has remained practically unchanged for eighty years; development of the existing potential for river transport is impaired by two factors. First of all, there is the geographical location of the rivers, which are far from the main economic centers and have no direct link to the sea, and, in second place, the fact that hydroelectric stations have been built without paying due attention to the construction of locks; the port system is, technologically, very out of date, all of which results in expensive services with low productivity.

2.1 Export Logistic Infrastructure

According to Fleury (2005), the first aspect to be considered in the export infrastructure is the participation of several modals in the international transportation. Studies from the Development Ministry and Industry and Foreign Commerce Ministry of 2001, showed an almost total domain of the sea modal to the commerce, responsible for the transport of 260 millions tons, which accounts for 95% of the total exported, due to the application characteristics of this modal. Besides being the more used, the sea modal was the one that has raised more over the last years, indicating a tendency for the increase of its participation in the export transport matrix. According to the author, this increases the strategic importance for the Brazilian economy, of possessing efficient ports, well localized and with enough capacity to fulfill the needs of the country.

2.1.1 The Ports

According to Porto & Silva (2000, p. 82), the ports are "physically composed by a finite set of installments mainly dedicated to the freight and other activities, allowed by the "Modernization Law" 8,630/1993, where both public and private sector take place. As mentioned before, the ports accounts for great part of the international trades or foreign commerce in Brazil, converging significant volumes of freight. For those authors, due to the change in the sea transport pattern and of the port freight, it has become necessary to develop an installment park in the port to fulfill the demands of the new freight market patters and to approach the port administration to its clients. Among theses improvements, the new sea and inland accesses, the facilities, warehouses, retro areas, skilled workers, new equipments of loading and unloading, and appropriate installations and international costs have outstand.

According to Fleury (2005), Brazil has actually 35 ports that load foreign commerce freights, whose about half (18) are located in the southern and southeast regions, and are responsible for about 75% of the cargo movement. The state with the highest number of ports that operate in the long course is Espírito Santo, with a total of six ports, followed by Rio de Janeiro (four), and by Santa Catarina (three). Regarding the foreign commerce volume in the ports, the main are the states of Espírito Santo, São Paulo and Maranhão, in this order. With exception of the state of Rio Grande do Sul, all the federal states that possesses long course ports effectively load mainly export freight.

2.1.2 The New Institutional Environment: The New Port Legislation

According to Porto & Silva (2000, p. 85), “Modernization Law” in the ports substantially altered the port environment, giving it a new dynamics for the option of a competition market that will be accomplished with the full share of the exploitation of the port services among several private suppliers.

Among the main changes outlined by the authors, coming from this law, one can notice the transition from a monopoly of the port administration in the exploitation of the facilities and port services and from a monopoly of the working union in the manage and payment of the port work force to a share of the port manage with the Work Force Management Bureau (*Órgão Gestor de Mão-de-Obra – OGMO*), and the Port Authority Council (*Conselho de Autoridade Portuária – CAP*). Besides, there has been an implantation of private port operators responsible for inland and on board operations and facilities, implantation of shifts and payment of the port worker by the OGMO, introduction of environmental parameters and opening for the implantation of a market economy. The law also reinforces the Port Authority, designated by the Federation, as the Port Administrator, acting integrated with the others, like custom and sea, sanitary, police, environment authorities.

According to Vieira (2001, p. 92), the main purpose of this Law was to assure “higher participation of the private initiative, an effective coordination of the port operations and a decentralized management that allowed the creation of tariff models adjusted to the needs of each port”. Also, the law would provide a better distribution of the modal in Brazil, according to competitive advantage, and allow that the private terminals could operate third party freights.

2.1.2.1. Port Services

According to Porto & Silva (2000), the port services can be differentiated among those provided to the freight and those to the shipment. The services provided to the freight consist in fixing, settlement, warehousing, dislocation to the dock or from the dock to the retro areas (horizontal transport), boarding and landing of the ship, settlement inside the ship, checking of the moved volumes to the ship, consolidation and deconsolidation, release and due payment to the freight. The services provided to the ship consist in tug boat, deep-sea pilot, supply services, mooring and unmooring, fixing, due payment to the shipping companies, opening and dredging the approach channel, draining of the dock and of other spots for mooring and a wide range of navigational aids (beacons, lighthouses and the system of buoys).

2.1.3 Logistics Challenges of Exportation

According to Fleury (2005), the explosive increase in Brazilian exports from 1999 to 2003 has revealed a series of logistics fragilities in the country. The weakness represented by the poor conditions of the roads, by the low efficiency and capability of the railroads, by the disorganization and the excess of bureaucracy of the ports, had as a result the increase of the trucks’ lines in the main ports, long awaits for ships to mooring, the not attendance of the delivery dead-lines, all that resulting in the increase of the costs and the reduction of the competitiveness of the Brazilian products on the foreign markets.

According to Hijjar (2004), several factors may be leading Brazil to the loss of competitiveness in the international trade against the other countries and to the poor use of all

economic growth opportunities. According to the author, some of the biggest exporting Brazilian companies indicate that their main restrictions to the exported volume are related to the costs and the uncertainties inherent to the production release process in Brazil. On the other hand, the issue on the ports has been long discussed in the country, once the ports face constraints that damage the exportation and the Brazilian competitiveness in the global market. Among these problems there are: lack of capacity to understand the demand and the low availability of warehousing; the low quantity of piers; the lack of coordination between what is sent and what can be received by the port; delay of the bureaucratic procedures; problems of depth and lack of dredging; bad railroad and road ports access; and frequent strikes of the entities that, somehow, have a negative impact over the processes of the international trade, reducing the efficiency in the release of the Brazilian exports.

For Porto & Silva (2000), the Brazilian ports suffer from a wide range of conjectural problems that can be defined as inadequate exploitation and the installation management, lack and inadequacy of the personal training, delay in the implementation of new port politics, reactions to the privatization of the port activities by traditional sectors, distortions on the use of the work force, low technological update of the ports, lack of participations of the ports' user in the port planning, lack of internal and external financial resources to the ports, and a still complex and little competitive port tariff.

3. TEORIC MARK

A possible explanation for the differences between the expected services and those found in the market can be located in the Transaction Cost Theory principles. This theory is part of the sketch of the New Institutional Economy, which had in Coase (1937) the pioneer of the construction of a new paradigm for the organizational studies.

The idea of a Transaction Costs Economy has begun to shape up in the 1930s, among economic challenges, in what regards the law and the organizational theories (Williamson, 1989). Gains in the exchange gave place to the ideal of the gains through the company.

This line of investigation of the organizational behavior of the companies, from Williamson's (1989) point of view, conceptually approaches the company not as a production function, as traditionally described by the neoclassic, but as a "governance structure".

The author supports that the "transaction" is the analysis basic unit and reinforce that it is the organizational shape determinant. The transaction is an operation in which the rights of property are negotiated. In this sense, the firm may be seen as "multiple complex contracts", once the productive organization may be via firm (hierarchy), via market or by mixed forms, from the search of the production costs minimization (neoclassic) and of the transaction costs.

Under this new vision, Williamson (1991) stimulates a source more associated to the study of the coordination of vertically integrated firms, from the concept of transaction costs, which is "the cost of managing the economic system", differed from the production costs. So, the transaction costs can be understood as the costs incurred by the individuals that economically depend on the other to get the goods and services that they need for the production. They are the costs of acquiring and processing information regarding the contracts related to the future events that may not be prevented with certainty; the costs of monitoring the performance of each contracting part in the specified period; the organizational costs incurred by the inefficient behavior of the contracting parts and the legal costs associated to the punishment

of rule breaking. Synthetically, first, the transactions are complex property rights trade mechanisms. Second, the transactions have multiple dimensions and involve formal and informal norms. Third, it can be considered as transactions (object for cost measurement) every change related to the property rights of tangible or intangible productive resources (Zylbersztajn, 2003).

In the export operations, Lucci & Scare (2005), characterize the transaction costs occurrence in aspects related to the warehousing and storage of the product, service center support, availability of transporting belt, scales, wharves and shipyards, derrick and skilled work force, among others.

The analysis of the transaction costs involves an examination of the comparative costs of planning, adapting and monitoring the execution of tasks under alternative governance structures, having the transaction being made as an analysis unit, not the price any more (Williamson & Masten, 1996).

The transactions present several characteristics that may interfere in the relationship between two agents and in the contracts established by them, according to Williamson & Masten (1996). The frequency in which the agents perform certain transactions is one of them, and is connected to the reputation of both parties in the contract, as it may attribute a value to the non-opportunistic behavior of the agents. This tendency allows the preparation cost lowering and the contract monitoring. That is, decreases the transactions costs.

Another important characteristic is the uncertainty, which may cause in contract break, followed by the appearance of irremediable transactional costs. Azevedo (1996) points out the uncertainty with the transactions third dimension, identifying two ways of uncertainty associated to the transaction. The first of them is designated as risk: It is said that a transaction is associated to risk if there is a correspondent probability of occurrence of a disturbance associated to the distribution curve previously recognized. The second, that corresponds to the uncertainty itself, corresponds to the disturbance that affect a transaction, but that are not associated to a known probability distribution. The asymmetric information is an example of such kind of uncertainty among the agents involved in the transaction, that disables preventing the acting way of one another. The uncertainty associated to a transaction affects the efficiency of the organization. The greater is the uncertainty, the greater is the tendency of an adoption of hierarchy ways of governance.

The third and last characteristic of the transaction is the particularity of the assets. According to Williamson (1991), for particularity of the assets one must understand the degree in which the asset may be reused in alternatives uses and by alternative user without scarifying its value. The ships used in the cabotage are very specific, and may cause in great damages if there are not enough shippers so they can make their journey.

3.1 Relations modal choice-transaction costs

Theoretically, the decision maker regarding the transport modal ponders his decision based on several attributes that compose its utility function, that must be maximized (Monteiro *et al*, 2001). These attributes involve operational costs, transit time, services frequency, security and other logistics services, among other relevant factors.

In this sense, it is relevant to stand out that part of the modal choice attributes that are not directly related to the financial costs of the operations may be examined recurring to the analytical table of the New Institutional Theory and of the Transaction Costs. These attributes would be translated in lack of punctuality, lack of regularity and fastness, low level of frequency and long term journeys, low transport flexibility, excessive number of stop and bad information displayed of the sea services, among other characteristics.

Corroborating with such perspective, Monteiro *et al* (2001) support that the decision makers on the modal to be chosen for the logistic supply chain take into consideration same specific criteria, such as cost, quality and cost for specific logistics needs. The first case assembles traditionally the commodities traditional shippers and then they consider the costs almost exclusively. In the second case, the decision makers ponder and evaluate the trade offs between the costs and the other service quality criteria to make their decision. In the last case, the shippers have specific needs to load/unload their cargo.

The advantages of the sea transport mainly consists in the guarantee of the scheduled delivery deadlines, in the handling of great volumes through long distances, and as feeding system to the international sea freight transports, besides contributing to the improvement to the road traffic and the decrease of the pollution and noise levels. Besides, the shipping transport has improved itself and gone through technological progress that has contributed to an even more punctual service. As this is the cheapest modal, it is essential to stand out the advantages of an efficient and cheap transport system, once it contributes to intensifying the market competitiveness, raising the economies of scale in the production and reducing the overall price of the products (Ballou, 1973).

It is noticed that the environment in which the sea transport is inserted is favorable to its development. So, the economic stability with greater inflation control, the modernization process of the ports, the high costs of the road transport, the economic decentralization and the improvement in the regional unevenness, the strengthening and expansion of the warehousing structures, such as the dry ports and the distribution center, and consolidation of the logistic operator image are the mains conditions to the expansion of the cabotage service suggested by the present work, and for the increase of interest of the operating or transporting companies in understanding the real shipper demands and expectations.

4. METHODOLOGY

This research is characterized as descriptive as end, once the study intended to establish relationships and/or associations among the decision criteria and the port choice to perform the exporting activity of the analyzed company. Besides, having described the characteristics of such phenomena, exposing part of the ports choice process to the production release to the international market, having also an explorative character, once the research aimed at searching for more knowledge regarding the subject (VERGARA, 2005).

The mean used to develop the study was the case study, which allows, according to Gil (1999), deepening and detailing a specific situation, being applied to one or a few research units. The study involved the use of direct survey and documental research, using internal documents from the company, such as cargo manifests, financial and accountable controls, contracts and service deliver receipts, for the analysis and systematization undertaken.

From identifying the ports' choice criteria through bibliographic research, a documental investigation was undertaken to improve the relevance of this criteria to the company and the way they define the port of destination for the production release to the international markets. The collected data were then analyzed after the choice criteria defined by the bibliography, and part of them was processed through building comparative tables of transportation costs, port costs and levels of service.

In the presented context, this research aims at deepening the knowledge on the logistics planning in Brazilian companies, trying to comprehend the whole of the transaction costs in the scope of such planning effort. According to Sachan & Datta (2005), the behavior approach of the logistics problems, such as the methodological basis of this research, is desirable to improve and consolidate the research in this field. The authors recommend the use of the Case Study and Action-Research research methods, and suggest that the research in logistics could benefit itself from the application of existing theories in other disciplines, emphasizing the need of more behavior research to complement the limitations of the quantitative methods, employed in general in studies in these fields of knowledge.

4.1 Data collection techniques

The semi-structured interview was used as a tool for the data collection, once it represents one of the most important sources of information for the research problem, allowing more deepening on the issues and obtaining the perceptions and interpretations of the matter by the interview. Besides, the present study committed itself to make use of secondary data (documental organizational data), bibliographic research and observations, to support the treatment of the collected data.

4.2 Treating data technique

The data collection technique was qualitative. The data were expressed in literal and numerical forma, allowing treatment through content analysis. From the obtained answers a qualitative analysis was performed on the information based on the knowledge about the criteria in the logistics port choice.

4.3 Analysis unit

The analysis unit of the present study restricted itself to every activity performed by *Belgo Bekaert Arames*, in what regards the export process through the ports of Santos, Rio de Janeiro and Sepetiba, the port expenses coming from the services provided by the ports, the level of services of the services providers and the ports' choice criteria for releasing the production to the foreign market.

4.4 Observation unit

The observation unit consisted in all the professionals responsible for any relevant activity related to the export process through ports, the activities and services on the port and to the ports choice criteria mentioned above, mainly approaching the managers of the logistics processes in the studied organization and the ports of the destination.

5. RESULTS: ANALYSIS AND INTERPRETATION

The studied company makes use only of the ports of Santos and Rio de Janeiro to export. From data relative to the year 2006 until August, the distribution configuration between the ports represented shows that 81% of the total exported volume went to the port of Santos, and the other 19% went to the port of Rio de Janeiro.

5.1 Ports Choice Criteria

Although the studied case deals with the choice of the port to export, such decision has the character of a modal choice. Such choice involves analysis of criterion that drive the logistics manager to make decisions. Companies usually define their logistics strategy according to two or more requirements. In the studied case, there were 14 (fourteen) criteria identified for the ports' choice to be observed, grouped in two different approaches that interfere in the decision making: cost (primary analysis) and levels of services (complementary analysis).

The attribute "Cost" involves expenses such as (1) road transport, (2) cargo terminals, (3) dispatcher, (4) fumigation, (5) port expenses and (6) sea transport. The levels of work, on the other hand, are composed by (7) attendance of the service suppliers, (8) choice of shipping companies, (9) available lines and /or routes, (10) ships' frequency, (11) strikes, (12) port infrastructure, (13) forwarding cargo e (14) stops canceling.

Although every identified criterion is relevant for the choice of the port, a ranking was undertaken in descendent order of importance of each one by their influence they have for the decision for each approach. This information is summarized in Table 1.

Table 1 – Ranking of the ports choice criteria, according to the groups of attributes

Cost	Levels of Service
1° Road Transport	1° Attendance of the Service Suppliers
2° Port Expenses	2° Port Infrastructure
3° Cargo Terminals	3° Strikes
4° Dispatcher	4° Choice of Shipping companies
5° Fumigation	5° Frequency of Ships
6° Sea Transport	6° Available Lines/Routes
	7° Forwarding Cargo
	8° Stops Canceling

Source: Research findings

5.1.1. Costs

The maritime freight is the criterion with the lowest weight for the cost approach to be taken into consideration in the ports' choice process, once its value is not dependent on the selected port and, therefore, does not influence the decision making process of the company.

The criterion with the highest weight in the structure of cost is the road transport to the ports, once it has the most significant percentual in the composition of the total cost. The road transport cost is followed by the port costs in the order of importance in the ports' choice. These costs are related to the cargo movement in the terminals, anti-terrorism tax, expenses with the container weighting and handling.

The subsequent costs refer to the services delivered by the direct company supplier: cargo terminals, dispatcher and fumigation company. The costs incurred with the services at the cargo terminals have a more significant share in the cost composition than the cost with the dispatcher, which is more significant than the cost with the fumigation company in terms of value and of share in the total cost.

5.1.2 Levels of Services

The levels of services seem to determine the choice of the port in detriment of the cost. Such questioning was corroborated by the research, once that for the case study there is a preference for the port of Santos, despite of it being the one that presents the highest costs when compared to the operational costs of the ports of Rio de Janeiro or Sepetiba, that offers the highest levels of services.

The attendance of the services suppliers and the port infrastructure are the two main criteria for the ports selection, once they possess the greater weight in the evaluation of the levels of services, and part of this value comes from the efficient action of the dispatcher, the cargo terminal operations and of the fumigation company. This criteria approaches the quality and accuracy of the services, the promptness and availability of the worker for the attendance, the periodic production of reports, flexibility, the time for performing the tasks, eventual benefits and additional costs.

Next, the port infrastructure is evaluated, what concerns the following variables: proximity to the port, access to the port, warehousing capacity, location of the warehouse, facilities, skilled work force availability and know-how of the services providers.

The incurrance of strikes is the third requirement to be evaluated in the levels of services approach, covering the most variable levels, such as customs, truckers and terminal strikes. Such concern comes from the simple fact that, most of the time, such stops imply delayed deliveries, as well as other inconvenient to the export process, for both the exporter and the importer.

The first three criteria (attendance of the logistics services suppliers, infrastructure and strikes) are related to the logistics installments of the port itself, once the other identified criteria regards the services provided by the shipping companies. Among the other levels of services criteria, the shipping companies choice precedes the others, once the shipping companies differ from the way they act and moor in the ports. This criterion is followed by the ships' frequency and by the available lines or routes, once it is the relation of available shipping companies in the port that will determine these criteria.

Finally, the forwarding cargo and stops canceling are evaluated in this order of importance. The forwarding cargo is a result of several factors, such as the stops canceling itself, overbooking and the interference of the bad weather.

5.2 Comparative Analysis

Once the relevant criteria for the selection of the ports are identified, one tried to identify the performance of the ports of Santos and Rio de Janeiro, both ports already explored by company, and the port of Sepetiba, aiming at recognizing the choice drivers for the exporter in what concerns the use of ports for exportation.

To establish a coherent comparison, it was necessary to establish a performance evaluation parameter of the ports in the identified criterion, so then confront the results of each port and evaluate the total performance of each one. The chosen evaluation parameter was a five-point Likert Scale, where for each of the ports' performance in a certain criterion was attributed to a value between 1 and 5. The value 1 can be associated to a terrible performance, and 5 is attributed to a great performance. The performance evaluation of each criterion was tabulated

for each chosen approach, costs and levels of services. A synthesis of such results is described as follows.

5.2.1 Costs

To perform its exporting process, BBA appeals to several services that naturally impose costs to its operations. Among this service providers there are the cargo terminals, the dispatcher and the fumigation company. The prices paid for the services of those suppliers are usually pre-agreed, negotiated and established through contracts or agreements, but they vary according to the port.

The costs criteria evaluation is presented in Table 2. It is noticed, for the cases of the ports of Rio de Janeiro and Sepetiba, that all the costs criteria for the operation on these ports presented a better or the same performance to those identified for the operations in the port of Santos. The minimum and maximum values, attributed to the performance in each port, as well as its mean and mode, prove a better overall performance of the port of Sepetiba, followed by the port of Rio de Janeiro and, finally, the port of Santos.

Table 2 – Comparative evaluation of the ports’ choice criteria according to the costs parameter

Criteria	Ports		
	Santos	Rio de Janeiro	Sepetiba
Road Transport	3 – regular	4 - good	4 – good
Port Expenses	2 – bad	3 – regular	4 – good
Cargo Terminals	3 - regular	2 - bad	3 – regular
Dispatcher	3 – regular	4 – good	4 – good
Fumigation	4 - good	4 - good	4 – good
Minimum	2 – bad	2 – bad	3 – regular
Maximum	4 – good	4 – good	4 – good
Mean	3 – regular	3,4 – regular/good	4 – good
Mode	3 – regular	4 - good	4 – good

Source: Research findings

Regarding the road transport, the ports of Rio de Janeiro and Sepetiba had the same evaluating for being relatively equidistant from the export company BBA located in the city of Contagem, state of Minas Gerais. As the port of Santos is more distant to the fabric in relation the other ports, the road freight rate is consequently higher, justifying a worst evaluation of this criteria for this port.

The port expenses are also higher for the port of Santos. So, it was evaluated as “bad” in comparison to the others. Next, in terms of superior port expenses, there is the port of Rio de Janeiro that had a regular evaluation, and, finally, the port of Sepetiba, which was evaluated as “good” in this criterion.

For the cargo terminals costs, the ports of Santos and Sepetiba were equally evaluated, receiving the grade 3, equivalent to a regular performance. The port of Rio de Janeiro, on the other hand, had the worst evaluation in this criterion, getting the grade 2, which means a bad performance.

The dispatcher expenses were equivalent for both ports, Rio de Janeiro and Sepetiba, being attributed as good. The port of Santos was again badly evaluated in this other cost criteria, getting a regular grade.

All evaluated ports received the same grade (good) for the fumigation expenses, once this value does not depend on the port through which the merchandise is exported, having an standard value for all three ports. There is certain incoherence in comparing the ports in what regards the sea freight, once there is no significant difference between its value for each port, justifying why the evaluation for this performance was omitted for this criteria.

5.2.2 Levels of Services

Once the cost criteria have been analyzed, the criteria regarding the levels of services associated to the choice of each port was then evaluated. Differently from the cost approach, the port of Santos was, undoubtedly, the best evaluated in this approach, presenting better or the same performance in all of the evaluated criteria in relation to the others ports. The minimum and maximum attributed values for the performance of each port, as well as its mean and the mode proves a better overall performance of the port of Santos, followed by the port of Rio de Janeiro, and by, in last, the port of Sepetiba, what can be confirmed by observing Table 3.

Table 3 – Comparative evaluation of the ports’ choice criteria according to the levels of services parameters

Criteria	Ports		
	Santos	Rio de Janeiro	Sepetiba
Attendance	4 - good	3 - regular	2 - bad
Port Infrastructure	4 - good	3 - regular	2 - bad
Strikes	4 - good	1 - terrible	2 - bad
Choice of Shipping companies	5 - great	3 - regular	3 - regular
Ships’ Frequency	5 - great	4 - good	3 - regular
Available Lines/Routes	5 - great	4 - good	3 - regular
Forwarding Cargo	3 - regular	3 - regular	2 - bad
Stops Canceling	4 - good	3 - regular	2 - bad
Minimum	3 - regular	1 - terrible	2 - bad
Maximum	5 - great	4 - good	3 - regular
Mean	4,3 - good/great	3 - regular	2,4 - bad/regular
Mode	4 - good	3 - regular	2 - bad

Source: Source: Research findings

Regarding the services suppliers attendance, the port of Santos was the best evaluated, receiving the grade 4, for presenting the service suppliers with the best attendance quality and accuracy, and regularly sending reports. Next, in terms of having a good evaluation on this criteria, comes the port of Rio de Janeiro, which was evaluated as regular. Sepetiba, on its turn, was the port more poorly evaluated in this criterion, having received the lowest grade for being a relatively new port not used by the company, making BBA not have a very good base of comparison of the levels of the services suppliers attendance.

In what concerns the port infrastructure, the evaluation of the performance of each port, in this criteria, presented the same behavior perceived in the case of the logistics service suppliers attendance, where the port of Santos was evaluated as good service, Rio de Janeiro received the regular grade and Sepetiba was evaluated as bad service. Although the port of Santos is the most distant from the industrial unit, it is the one that presents the best access to the port,

the greatest moved freight volumes, the highest skilled work force availability and the service suppliers with the best know-how.

Regarding the strikes, the port of Rio de Janeiro was the worst graded, undoubtedly, in relation to the other ports. This is greatly due to the lack of alternatives presented by the ports to the exporter under these circumstances. Sepetiba was also badly evaluated in this criterion, getting a bad grade. Only the port of Santos was well evaluated, receiving the grade “good”, for being a port that runs a standard procedure in such situations, releasing the merchandise.

The port of Santos is also the one that presents the best shipping companies options, an essential aspect in the port choice process, once they represent the access way to the international market. The ports of Rio de Janeiro and of Sepetiba were evaluated with the same grade, regular, as they both share similar options of shipping companies.

Due to the greater option of shipping companies the port of Santos counts on a better ship’s frequency with a wide range availability of sea routes, all criteria evaluated as great. Next, there is the port of Rio de Janeiro, evaluated with a regular concept, also in both criteria for still being a port with less cargo hauled when compared to the others.

The incidence of forwarding cargo has had equal performance for both ports of Santos and Rio de Janeiro, being graduated as regular. The port of Sepetiba, on the other hand, has received a bad concept for its performance in this criteria. Finally the incidence of stops canceling has had a good performance in the port of Santos, meaning that it is the port that less suffers with such kind of restriction. The port of Rio de Janeiro was evaluated as regular, and the port of Sepetiba as but, for having both frequent canceling, having many times to appeal to the port of Santos to fulfill its export commitments. And for being the last ships’ stops of exporting ships in the Brazilian coast, the effects of a escala canceling are worst for these ports.

5.3 Transaction costs involved and the ports choice

From one hand, the Brazilian institutional environment, regarding the port operations, imposes severe transaction costs. Despite the effort of the so-called Modernization of the Port Law (8630/93), it is still strong the lack of credibility in operating in the Brazilian ports. On the other hand, there still are strong barriers to the service supply in a more competitive way, or at least some contestability, such as the intern port warehousing, terminal and movement and also the services of the union work force.

In this case, the transaction costs became extremely relevant related to the costs eminently financial. Such fact became evident in the comparative analysis for the port’s choice. It was evidenced that in what concerns the costs, the ports of Rio de Janeiro and Sepetiba present the most favorable condition in comparison to the port of Santos, which is better graded in what concerns the levels of services. This shows that the level of services criteria could be playing, as a matter of fact, a bigger influence in the process of the port choice them, specifically the cost criteria.

6. FINAL CONSIDERATIONS

This article has evaluated the public-private relationship in the corporate decision making process on the port to export, presenting the case study of Belgo Bekaert Arames – BBA, a manufacturing company of wires and derived, and biggest Brazilian exporter of such items,

with wide operation and leadership in both national and international markets. Synthesizing, the research shows that this public-private relationship formats an environment poorly adapted to the increasing level of competitiveness in the global scene, for practically every product, and for practically every international market. In the researched case study, the basic parameters around which the attributes, costs and levels of services are developed are negatively affected by this relationship.

The port of Santos has the best comparative advantage in terms of infrastructure. Besides, Santos counts with a better warehousing capacity, access way to the port and greater specialized work-force availability, for being the port that handles the greatest freight volume among the studied ports, even that it is in disadvantage concerning the proximity to BBA's manufacturing company.

Besides there are certain shipping companies that take key routes for BBA, that moor in the port of Santos and that reaches more company customers, as USA and Extreme Orient, but however do not moor in the port of Rio de Janeiro or in the port of Sepetiba. Compared to the port of Santos, the ports of Rio de Janeiro and Sepetiba still present relevant restrictions in what concerns the shipping companies offer. That is, even though both ports have the same option of available routes, they present different frequencies of ship's mooring due to the wide range of shipping companies available for each port. Once the shipping companies alternatives are greater in the port of Santos than it is in the port of Rio de Janeiro, for example, the ship's frequency will also be greater in Santos. The port of Sepetiba lacks certain routes, making its choice of use a lot less interesting to the exporter.

The forwarding cargo and the stops canceling are inherent aspects of all analyzed ports, although there is a difference in the way of handling the situation adopted by each port. Santos suffers less by the stops canceling than the ports of Rio de Janeiro and Sepetiba, once as the export ships move up the Brazilian coast in the south-north direction, the ports of Rio and of Sepetiba are more willingly to have stops canceling for being geographically positioned upper than the port of Santos.

Although the transaction costs are high among the researched port alternatives, the ship's frequency and the facilities of complementary and bureaucratic services imply greater relative costs of not operating in Santos. Although such preference may be understood by the technical need of freight concentration, which is a world trend, the already overloaded infrastructure of this port must be in context. That is, a plan of quick answers to the already identified and planed bottlenecks is necessary to allow the port to reply more promptly to the need of its clients, once the transaction costs, as well as the financial ones, are significantly superior to the international benchmarking, implying important competitive loss of the companies situated in Brazil and that perform in the foreign market.

The present study has limited itself in analyzing only part of the export process, concentrating in the processes of warehousing and shipment of the merchandise, which represents only part of the international physical distribution. The process as a whole, consists in a set of intervenient elements in the way of the product between the manufacturing and consumer markets, through distribution factors management, among which transport represents only one of them, not considering the process until the product's final destination and the regulating legislation for the international trade. Therefore, one should deepen the analysis on the export process, approaching all of these elements.

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