



## **THE SUAPE INDUSTRIAL AND PORT COMPLEX PROJECT (CIPS): THE TRANSFORMATION OF LOCAL WORKERS INTO GLOBAL PROFESSIONALS AND THE INFLUENCE OF SOCIAL NETWORKS - A CASE STUDY**

**Nelson Roberto de Albuquerque Bezerra, Luiz Fernando Rezende de Souza, José Rodrigues de Farias Filho**

### **ABSTRACT**

This article presents the importance of the Suape Industrial and Port Complex (CIPS), in Pernambuco, for the economy of scale, scope and generation of jobs and income in the SUAPE region. The integrated logistics of companies installed in CIPS reconfigured the economy and social networks from the organizational learning experienced by the local population in the change from the essentially agrarian environment to an industrial complex. This is an exploratory study of a qualitative nature, based on bibliographical research, using the case study method, which revealed the relationship between organizational learning and the configuration of social networks in the process of transformation of workers Global locations.

**Keywords:** Organizational Learning. Globalization. Social networks.

### **1. INTRODUCTION**

The progress of the globalized economic activities associated to the technological paradigm heavily influenced the last decades of the 20th century. This has allowed greater openness of peripheral economies and the reduction of the role of the State as an inducer of economic activities (Valente, 2001).

The entry of foreign investments in Brazil, through the formation of international business consortia, allowed the implementation of daring projects of large-scale complex production in regions with little or no industrial tradition. The advance of information, communication and transport technologies were necessary to turn into reality this fact that mobilizes an indistinct set of actors involving the different levels of power of the State, organizations and society (Cassiolato et Lastres, 2003).

Buarque (1999, p. 10) reveals that “contemporary conditions of globalization” take place within a great process of transformation which requires local development in a model of “economic integration with the regional and national

context”, generating and redefining opportunities and challenges, “Demanding competitiveness and specialization” of all involved.

Brazil opened space for the construction of large productive complexes in different states of the federation entering the globalized economy, with the intention of confirming itself as a producer country of high-scale manufactures from self-sufficient plants. Daring projects such as the petrochemical and metallurgical centers in Bahia, Alagoas, Sergipe, Maranhão and Pernambuco states (Oliveira, 2013) emerged from this context.

The construction of such projects created large construction sites that attracted labor from different parts of the country and the world. The myriad of organizational representations that made up the original projects created human interactions supported by networks of business and social relations based on technology.

In this context, we observed that the presence of people of different origins and social classes, when interacting within the same environment, in this case the worksites where



the companies of the complexes would arise, produced new forms of network relationship, which resulted in different forms of organizational learning.

Along with this, the Brazilian State no longer appears as a promoter of projects, but as a provider of means by which these challenges can be realized (Valente, 2001, p.78). The training of operational labor in industrial complexes and the production of research in science technology represent some of the contributions that Brazilian Technological Centers and Universities can provide. In this case, the effective presence of government representations can ensure the transfer of technology and foster research (Cassiolato et Lastres, 2003).

Given the impact of the installation of large plants, it would be unthinkable not to attribute to the Brazilian government the role of mediator of conflicts in the face of the complexity of interests of capital, classes and society (Teixeira, 2002) usually formed by transnational companies, in addition to hiring professionals from different backgrounds, from inside and outside Brazil, reconfiguring the geography where they settle and affecting the environment and the local population. The transformations also interfere in the economies of countries around the world, with repercussions in less developed sub-regions.

The present study aimed to focus its research on the SUA-PE complex that brought economic growth to a degraded area of the Metropolitan Region of Recife-PE, changing the local geography and reconfiguring the traditional subsistence production arrangements with the insertion of an integrated industrial complex with specialized workers.

It is important to highlight that, during the activities related to civil construction, the region was able to offer companies and professionals to meet such demand, a fact that was not repeated during the construction and operation of the site belonging to the SUAPE project. The migration of shipbuilding companies and professionals, predominantly from the Southeast Region, came to solve the lack of local labor, generating a series of transformations in society and its relationship with the public government and private organizations of Pernambuco.

The influence of the organizational culture of the Samsung Korean company and the Japanese IHI also promoted the emergence of new social networks and concepts on organizational learning, since both established a partnership with Brazilian technicians and engineers who, through exchange, had the opportunity to work in the base countries of these Transnational organizations. Porto (2008) emphasizes that "the necessary conditions for the positive transfer of learning in the work environment involve aspects related to psychosocial and material support".

The choice for this present study arose from the restlessness of one of its authors, who witnessed part of the facts reported here and manifested the desire to show that the process of migration of local to global labor is structured by reconfigurations of the Social networks that undergo strong influence of the organizational paradigms of the companies acting in the production environment generating new competences by the organizational learning.

The methodology adopted for this purpose was based on an analysis of the available bibliography on organizational learning and knowledge management, sustainable development, project management and reports on the design and implementation of CIPS. The method chosen was qualitative, with the application of bibliographic research and case study techniques.

The article is organized in four sections, contemplating the following themes:

- Presentation of a brief report on the history and implementation of CIPS;
- Identification of the relationship between project management and organizational learning;
- Evaluation of the impact of social networks on the transformation process of CIPS workers;
- Considerations about the influence of the relationship between organizational learning and the configuration of social networks in the process of transforming local workers into global professionals.

Finally, the research problem was to demonstrate that local workers, as small farmers and fishermen, did not have employability conditions to work in the Suape Industrial and Port Complex (CIPS). Thus, this research sought to identify how the existing human capital in the Ipojuca region and its surroundings in Pernambuco contributed to the transformation of local workers into global workers, as well as their impacts in the context of social networks and their influence on CIPS.

## 2. METHODOLOGY

This unique and embedded case study deals with the transformation of local workers, such as small farmers and fishers, into global workers, as they work with technologies used in a globalized world for shipbuilding, as for example, from Welders to electronics technicians. Thus, the exploratory and descriptive case study intends to know and divulge the effects of this transformation in the region of Suape, in Pernambuco.



In an exploratory study, the researchers start from a hypothesis and deepen their study within the limits of a specific reality, seeking antecedents, greater knowledge, to then to a descriptive research (Yin, 2001).

Exploratory study is appropriate when available knowledge is insufficient to establish cause and effect relationships. Exploratory studies do not elaborate hypotheses to be tested, restricting themselves to seeking more information about the studied subject, according to the established goals (Cervo et Bervian, 2002). Additionally, the study had a descriptive purpose, requiring the researchers “information about what they wanted to research. [...] The descriptive study intends to describe ‘accurately’ the facts and phenomena of a certain reality. Other descriptive studies are called case studies. These studies aim to deepen the description of a certain reality” (Triviño, 1987).

According to Yin (2001), the case study is an empirical research that investigates a contemporary phenomenon within a real-life context, especially when the boundaries between phenomenon and context are not clearly defined. The case selected was the Suape Industrial and Port Complex in Pernambuco, and the transformation of local workers into global ones in the region.

We used techniques of documentary analysis and direct observation for data collection. The technique of documentary analysis, as the name suggests, refers to the study of company documents. A document is any knowledge base or source accessible for consultation (Pádua, 1997). The sources were selected in order to assure the relevance to the research objectives. Direct observation consists of the personal and narrow contact of the researcher with the object of the study, allowing him to use his knowledge and his experiences as auxiliaries in the process of understanding and interpreting this object.

According to Vergara (1998, p. 46), documentary research is “that carried out on documents kept inside public and private bodies of any nature, or with persons.”

The choice of case was based on the following criteria: multinational companies with subsidiaries in Brazil; transformational challenge of the project in turning local workers into global ones; familiarity of one of the researchers with the case and access to their protagonists.

### 3. THEORETICAL FOUNDATION

#### 3.1. A brief retrospective of the evolution of the Suape Industrial and Port Complex

The history of the origin of the Suape Industrial and Port Complex project began in the 1960s, when the Brazilian go-

vernment prepared an analysis on the feasibility of establishing a ‘superport’ designed for export and the installation of industries in its surroundings.

The initial idea was to create a demand-generating port that would not be dependent on local production. Figure 1 below presents the CIPS timeline and its evolution from the 1970s based on the publication of Gumiero (2016), Oliveira (2013) and Medeiros et al. (2014).

Period	Description
1970	Suape conception, based in the modern concept of port-industrial integration, as already existing in the Ports of Marseille-Fos, France, and Kashima, Japan.
1973	Commencement of elaboration of the master plan for the implantation of the industrial and port complex integrating extensive area for industries and services of support to the maritime port.
1974	The Foundation Stone of the Port of Suape is laid during the government of Eraldo Gueiros Leite.
1976	The inter-ministerial group is created to examine the technical, economic and financial feasibility of the project.
1977	Beginning of the first services and expropriation of about 13.5 thousand hectares of land. After this phase, work begins on port infrastructure, internal road system, water supply, electricity and telecommunications.
1978	The State Law n. 7,773 dated November 7, 1978, creates the company SUAPE – Industrial Port Complex, with the purpose of administering the implantation of the industrial district, the development of works and the exploration of port activities.
1983	The Port of Suape begins to operate, effectively, for the transport of alcohol by Petrobras, which used the newly inaugurated the Liquid Bulk Pier, PGL-1. BR Distribuidora, Shell, Texaco and other companies formed the “Pool of Petroleum Derivatives” in SUAPE when transferring from the port of Recife.
1991	The Quay of Multiple Uses begins operations and the Port of Suape is included in the list of the eleven priority ports in Brazil, to receive federal public funds for investments in port infrastructure. From then on, Suape ceased to be just an industrial port, becoming a port hub for public use cargo. The containers begin to arrive at the Suape and carry out their movements in this same quay.
1996	Suape is included in the ‘Brazil in Action’ Program, with financial support from the Federal Government for the implementation of the first stage of its internal port.
1999	Conclusion of the construction of the internal port with 925 meters of new piers accessed by an opening in the reef line, 300m wide and 15.5m deep.
2000	Commencement of the construction of the Liquid Bulk Pier 2, or PGL-2, to be finalized in the following year.



2001	Company Tecon Suape rents quays 2 and 3 of the internal port, with a planned movement for more than 300 thousand Teu's. In order to attend to the expansion of the port area and the significant increase in cargo handling, the duplication of the port avenue completed in 2002 began.
2005	Installation of the General José Inácio Abreu e Lima Refinery in Pernambuco, and, later, Suape counted on large projects such as shipyards and the Petroquímica Suape - PQS.
2009	CIPS contributed decisively to the growth of the State's GDP, which increased by 3.4%, and to the generation of more than 46,700 new jobs. With more than 100 companies installed and another 35 under construction, the site has become a huge construction site that has generated thousands of jobs in a wave of development and social transformation.

**Figure 1:** Time Line of CIPS and its evolution from the 1970s

Source: Based on works from Gumiero (2016), Oliveira (2013) and Medeiros et al. (2014)

The choice for the Suape region, a word in Tupi-Guarani meaning 'sinuous paths', to locate a port occurred due to the following conditions: (Medeiros et al., 2014).

- Water depths of 17 meters along the coast line;
- Distance of 1.2 kilometers from the reef cord;
- Natural breakwater formed by reefs;
- Existence of an extensive area for the implantation of an industrial park;
- Distance from the metropolitan movement of the city of Recife.

A study carried out by the Condepe/Fidem Agency revealed a significant growth in the number of companies installed in Pernambuco, 100 already built and another 35 under construction, a fact that created an increase in the confidence of the business community with the project. Public investments in 2009 reached R \$ 700 million, reaching an amount of R \$ 1.4 billion at the end of 2010. New quays, piers and roads were built to support this growth. (Gumiero, 2017).

Suape operates vessels with no tidal schedule restrictions for 365 days/year. Silva et Rodrigues (2011) report that the port activities have exceeded 5 million tons of cargo/year, and 80% of its movement concentrates in the liquid bulk (petroleum products, chemical products, alcohols, vegetable oils etc.) and the rest of Containerized cargo. The external and internal ports have the capacity to serve large vessels: up to 170,000bpb and operating depth of 14.50m, and its backport area is 27km<sup>2</sup>.

The authors also add that the Port of Suape adopts the landlord port management model. Its Port Authority is responsible for the access and navigation channels and the rental of quays and embankments. And the port delegated to the private initiative the execution of port operations, the responsibility for investments in the superstructure of the terminals - yards, warehouses and equipment - and the industries located near the port. In addition, the complex offers the following advantages:

- Very attractive to national and international investors because of the strategic location on the eastern end of the South American coast, where the main commercial shipping routes to the North American coast and Eastern Europe pass. The port stands out due to the short distance of only 8 days from these regions;
- The SUAPE hub port profile connects it to more than 160 ports on all the continents;
- CIPS is installed in an efficient infrastructure with segmented industrial poles and training programs for local labor. The existence of areas with pre-approved environmental licenses (EIA/Rima) "are critical in the decision of the entrepreneur to settle in Pernambuco";
- The offer of tax benefits represents another great attractive in CIPS, as follows: reductions of 75% in federal taxes (Sudene), up to 50% in municipal and state programs, such as the Naval Industry Development and Associated Heavy Mechanics Programs of the State of Pernambuco (Prodinpe) and the Development Program of Pernambuco (Prodepe). The government of Pernambuco intended to stimulate the generation of jobs and the growth of the regional economy with this.

The attractiveness of the pole received the following companies: Abreu e Lima Refinery, Atlântico Sul Shipyard (largest shipyard in the Southern Hemisphere), Promar Shipyard, Suape Petrochemical, RM Eólica, Gerdau Aços Longos Siderurgia, Fiat – Automobile assembly, Shineray – Vehicle assembly, Transnordestina, General Motors Logistics Center, Textile Suape S/A, Braspack Embalagens do Nordeste S/A, Amanco do Brasil S/A, among others (note of the author).

Oliveira (2013) presents the concern with the local ecosystem that has been part of the project since the 1970s, which, through a "preventive, constructive and environmental compensation" policy, reserved 59% of the 13,500 hectares for the preservation of the environment.



In addition, through a partnership with Petrobras, port authority built the Environmental Technology Center, which integrates environmental protection activities into socio-economic and educational activities in the region, aiming at strengthening the ecological awareness of community dwellers and the employees of the more than 100 companies of the Complex.

We can infer from this brief report that the construction of the Suape Complex represents a great challenge for the public power and for the private agents who make up the companies installed in CIPS. The undertaking of such a daring project involved large financial resources, mobilizing human, technological and structural capital. In this context, the relationship created between the State, private organizations and society has generated significant changes, altering the logic of local social and production relations.

The next subsection describes the transformational process of production relations in the Suape context through organizational learning.

### 3.2. The Suape Industrial and Port Complex Project and the organizational learning in the transformational process of local to global workers

The Suape Industrial Port Complex project (CIPS) altered the landscape in Suape with the installation of large companies that boosted the local economy and brought growth to the state of Pernambuco's GDP. Its model is based on a concentration of large enterprises that allocates, in an area of 13.5 thousand hectares, the following businesses: a refinery, three industrial plants of a petrochemical company, a naval pole, with a shipyard already in operation, and more three under construction and one logistics hub (Bento, 2011).

During the phase considered the most promising of the project, which was between 2007 and 2010, CIPS offered 46.7 thousand new jobs and generated a growth of 3.4% in State GDP (Medeiros et al., 2014). According to Oliveira (2013), in the same period, the project received R\$ 1.46 billion in public funding and \$17 billion in private investments.

Faced with the amount of resources absorbed by the project and the level of production expected as the output to the investments applied, it was expected that the available human factor would be up to such a challenge.

Silva (2008, p.24) highlights the importance of companies that work in global markets to have collaborators who have more developed competencies in relation to those used in the scenario in which they operate. The constant need for the training of personal skills that include cons-

tant learning, focus on problem solving, "teamwork, leadership, technology mastery and business vision in a globalized market" is the basis of organizational learning and, consequently, the competitiveness of the companies established in CIPS. "The education assumed by the company allows us to diagnose, treat and direct knowledge management, which will serve as the basis in the company's internal processes" (Ibid., P.12).

In Senge's (1990) conception, developing a learning organization requires the training of individuals who can learn to see reality through a systemic perspective, to develop their personal mastery, and expose and reshape mental models in a collaborative way. In his work, *The Fifth Discipline*, he divulged the model of the learning organization, and since then numerous works and discussions have been made on this theme.

The five essential disciplines that help developing the learning skills in organizations are Self-domain, shared vision, team learning, mental models and systemic thinking. Figure 2 below briefly presents the five disciplines and their basic concepts.

FIVE BASIC DISCIPLINES	
Self Domain	It is the discipline that enables us to clarify and deepen our self-perception, concentrate our energies, develop patience and see reality objectively
Mental Models	Many administrative modifications can not be put into practice because they conflict with tacit and powerful mental models. Ex: framework software.
Shared Vision (Common Goal)	The company must have a genuine mission to give people the best of themselves and adopt a shared vision in which commitment prevails rather than acceptance.
Team Learning	A modern learning unit is the group and not the individual. It requires the practice of dialogue and discussion.
Systemic Thinking (the 5th discipline)	It is the discipline that integrates all others, the bond that merges them into a coherent body of theory and practice. "The whole can be greater than the sum of the parts."

Figure 2 - The five essential disciplines of learning organization  
Source: Based on Senge's work (1990)

A learning organization, according to Garvin (2000), is the one which is particularly skilled in learning organizational knowledge. In it, learning is not merely reactive, it is also international, effective and connected to the goal and strategy of the organization; the learning is timely and anticipates challenges, threats and opportunities rather than simply responding to crises.



Learning creates flexibility and agility so that the organization can deal with uncertainty, and most importantly, people consider themselves capable of continuously generating new ways to achieve their most desired results. Therefore, changes walk side by side with learning and take root rather than being transitory.

Organizational learning comes from past knowledge and experiences enabling organizations to scale up the ability to create and implement change. Salviato (1999) complements that learning allows the improvement of mechanisms to systematically solve problems and, thus, to continuously improve the decisions and implementation of actions.

The next subsection aims to present the ways in which human resources are adequately matched to the CIPS project and to reveal how organizational learning has contributed to achieving the desired objectives in Suape. It is worth stressing that, as already mentioned, (i) the workers from the vicinity of Suape came from agrarian tradition; (ii) the Complex brought professionals from other regions of Brazil; and (iii) many of the companies present at the polo were transnational contractors.

We organized the text aiming to show the employability conditions of CIPS human capital in terms of organizational learning, the evolution of employment in the complex and the qualification of the workforce for the activities of companies in Suape.

### 3.3. Human capital and CIPS employability conditions

The local situation of Pernambuco and the vicinity of the Suape complex, in relation to the supply of workers to attend the CIPS, failed to meet the demand of the project for human resources between 2007 and 2010.

The flow of professionals that moved into the region from the other parts of the country was also not able to supply the accelerated growth of infrastructure works and companies located in the complex (Lemos et Jesus, 2015). At that moment, the government intervened with inclusive policies, aiming at economic development for the population of Pernambuco surrounding Suape.

The analysis done by the authors of this work on the studies of competency formation led them to the study published by Silva (2008), which served as reference for this section, since it was specifically done for Suape.

The research carried out by this author in 2007 on sectoral education for the formation of individual basic skills highlighted the need for partnerships built between the

state government of Pernambuco, SESI/SENAI, the federal government, class institutions and private companies with the goal of supplying professionals to the complex, and promote human local development. The main facts selected from Silva's research (2008) were organized as topics and are listed below.

- The study involved planning, recruiting, and qualifying about 5,400 people to fill positions in the Suape industrial district. This was the first major action involving the workers of the region of Suape;
- This was an outcome from the National Oil and Natural Gas Industry Mobilization Program (PRO-MINP), involving investments of the following organizations: Petrobras, Atlântico Sul Shipyard, Tintas Iquine and Raymundo da Fonte (Brilux) which were already settled in the complex and also Queiroz Galvão, Norberto Odebrecht and Andrade Gutierrez companies, members of the consortium for duplication of BR-101 south federal highway;
- People who received training in professional development represented a large group of low-skilled and underemployed workers at the time;
- State Government outsourced The strategy for implementation of the training to the Social Service of Industry (SESI) and to SENAI due to their experience of in related activities of basic and professional education;
- The problem of the study involved the evaluation of stakeholders' perception, who performed the educational actions, that is, the training of the future workers and their effectiveness regarding the demands of the companies in Suape complex;
- The study concluded the following:
  - The linear strategic vision of the requesters was rectified by the correct choice for outsourced agents - SESI and SENAI, employers' representatives with experience in education;
  - Pernambuco State Government was effective in its action focused on sectoral education for the development of individual basic skills in a vocational context.
  - The contracting organizations apparently did not perceive their human resources as strategic, suggesting an opportunity for improvement in this regard.



The contributions that Silva (2008) brought to the present work are the suggestions at the end of his research which reaffirms the facts mentioned in the first paragraph of this subitem. The excerpt makes evident the low commitment of the main actors of the training process in relation to further local development, showing that the following actions are necessary:

- To create means to broaden the approach of the academic community to the Suape Complex and stimulate the production of more studies on the subject of sectoral education;
- To add courses in the training process to encourage student-workers to pursue their studies and improve their qualifications on topics such as technological innovation, product development, logistics solutions, local productive arrangements, investment feasibility studies and project management, aiming at new occupations in the Suape region;
- To improve the logistical planning of the courses with emphasis on continuing education in shorter courses for professional application;
- Conduct future studies about the CIPS workers who participated in the SESI/SENAI courses to analyze the effectiveness of the investments applied;
- To monitor the quality of life of the most humble people in Suape to produce studies about the level of development of this part of society, who inherited the culture of exploitation, an integral element of the historical roots of this region of Brazil, in order to promote improvement actions in a planned and sustainable way.

The CIPS implementation in the Suape region changed the local geography and affected the population of its surroundings. The changes caused on the local inhabitants reshaped the traditional social relations and reconfigured the landscape, changing the human occupation that had been there until the arrival of the industrial complex.

Lemos et Jesus (2015) presents the Municipality of Cabo de Santo Agostinho, where the CIPS is located, as a place where its residents depended economically on agriculture, fishing and small animal breeding. Another work option for the local population came from the farms' properties in the region, which exploited workers in exchange for low wages.

The installation of an industrial complex in an agrarian locality, through the occupation of the plantation space,

changed the logic of labor relations. There was a demand for a type of professional that was not available in the region and the withdrawal of the means of food production from the inhabitants of the same space.

It was the process of reconfiguration of this logic that came into effect in the context of the Suape project, in which human resources training actions were prioritized with the purpose of meeting the immediate needs of workers for CIPS. The means for the reversal of the process that transformed agricultural workers into industrial professionals are embedded in the organizational learning approach and are exposed in the following paragraphs.

The analysis of the publications about the training process of local workers for the CIPS complex found significant reports on the effectiveness of these actions in relation to social gains.

Oliveira (2013) describes in detail the actions of the government of Pernambuco and private companies focused on the qualification of local workers to supply the companies of the complex. According to the author, as of 2007, there were training of workers for heavy and light machinery, 13 new technical schools were created with a total offer of 13 thousand positions, and PROMINP assisted 6.2 thousand students. The author also adds other actions involving FIEPE, municipal governments, universities, SEBRAE, BNDES and the big companies of the industrial complex, adding that the Atlântico Sul Shipyard - EAS was a milestone in terms of demand for labor in the state. An intense process of discussion was established around the registration, selection and training, involving the Shipyard, the Labor Agencies, the city government departments of the region of Suape and the Senai. According to Senai-PE, as published in the newspaper O Estado de São Paulo on August 30<sup>th</sup> 2010, the number of students graduated from the institution increased from 19.4 thousand to 48.6 thousand between 2003 and 2010 (Ibid. 242).

The new occupations caused a rupture of the workers with their traditional activities, causing their moving towards the industrial segment. This fact, generated from an entire process of organizational learning, led to the emergence of previously unimaginable social networks.

The eminent migration of cane cutters to the Suape factory context is a striking example of the remarkable need to rethink the company-employee relationship; More important than that, the inclusion of these people in the cultural and economic network represents the amplification of the intensity of the development spiral that private investments will add in the State's GDP (Silva, 2008).



#### 4. SOCIAL NETWORKS AND THEIR IMPACTS ON THE PROCESS OF TRANSFORMATION OF WORKERS AT SUAPE INDUSTRIAL AND PORT COMPLEX

Granovetter (1973) elaborated an analysis of social networks and their importance for the understanding of the interactions between the micro and macro levels of organizations. In it, the author emphasizes the relevance of interpersonal networks and places them as a fundamental element to the strengthening of existing social bonds, categorizing them as strong and weak. The former are defined as those in which individuals spend more time, emotional intensity and exchanges, as friendship for example; the weak are those in which the investment is minor or zero, such as those held with known people.

The author makes an in-depth analysis of triads and bridges, revealing that weak relationships are what matter for the expansion and strength of networks. Intuitively, the explanation is simple: if two individuals have strong relationships, there is likely to be a superposition in their relationships, and the network as a whole is relatively limited. Considering that a triad is consolidated in the relations between three individuals, that is, if there are strong relations between AB and AC, then there is a BC relation, and these bridges represent connections between two individuals located in distinct and unconnected groupings, except by this connection that becomes the bridge between the two groups; in this relation the author establishes the basis of his studies.

In the view of the 2003 World Economic and Social Forum, social networks are aligned with the social capital of organizations, integrating themselves into structural social capital and distinguishing themselves in diversity of participants, institutionalization of decision norms, general or specific goals, size and geographical area, etc.

Cognitive social capital influences the collective action of the group and is based on the level of trust and expectation among individuals in a network. It should not be confused with human capital or infrastructure, as it is strongly related to access to information at the local and general level, making intensive use of the media, or in other words personal and impersonal sources.

Human capital encompasses the skills and knowledge of individuals who, together with other personal characteristics and the effort expended, increase the possibilities of producing personal, social and economic well-being. Part of this capital is associated with the formal or informal process of learning through which everyone passes, but both their acquisition and their use concern the individual. Infrastructure refers to the fundamental set of facilities and means for the production to be realized and distributed.

Social capital, in turn, can be defined as norms, values, institutions and shared relationships that interact with themselves, allowing for cooperation within or between different social groups. Thus, it becomes evident that the networks structure is based on social capital and represents the resource built by the communities in their networks of relationships, also conditioned by cultural, political and social factors.

The understanding of the training process especially contributes to the development and social inclusion of the communities, taking into account that the networks represent channels of information and knowledge. The values and expectations surrounding the network give rise to norms of control over its members (The National Economic and Social Forum, 2003).

Still according to the Forum, social capital has a multidimensional nature, and the cooperation from its networks allows the processing of information at low cost. In this case, the base relations for the formation of networks would be between equals, i.e., between similar individuals from the perspective of their demographic characteristics (bonding social capital), although this does not contribute to the community to overcome its own boundaries, which would be critical for building common goals and trust among its members.

For this to happen, networks must grow towards the creation of links with other similar communities, broadening the reach of their actions by producing bridging social capital, as happened in Suape.

The intense need for workforce in the Suape Industrial Complex reversed the direction of the migratory flow of the local labor community, making Pernambuco the destination of the best qualified workers in the most developed regions of the country. Another group of workers from Suape came from the sugar industry, who received professional training courses and technical qualification for the industry, which was fundamental for this workforce, mainly composed of sugarcane cutters (Oliveira, 2013).

Networks presuppose trust, and their importance in replicating collaboration among economic agents within CIPS had to be emphasized for the success of the project. The interrelationships of companies in a production network are based on social and cultural relations, such as kinship, religion, ethnicity, education, and historical, political or trade union conditions, which formed the basis of the local community.

Trust was built through continuous hiring and rehiring of workers. The presence of this socio-cultural, institutional and economic environment formed the basis for the exis-





tence of economic externalities, economies of scale, efficiency, economies of agglomeration, innovative capability, decentralized industrial creativity, potential for endogenous development at decentralized level, potential for endogenous development at regional and local levels, in addition to flexible expertise.

What was observed in Suape's case opened many possibilities for understanding the importance of social networks and their constructions. Below are the final considerations of the present work.

## 5. FINAL CONSIDERATIONS

The goal of this study was to demonstrate one of the critical factors of the Suape Industrial and Port Complex Project (CIPS), the human capital, formed mostly by low-educated workers who survived by subsistence agriculture or fishing activities. The CIPS, through social programs and partnerships with the structuring companies, carried out the inclusion of these residents in the development of the project, filling the project job positions by these Pernambucans.

CIPS received investments of more than R\$30 billion and generated more than 20 thousand direct jobs, while also transformed the region of Ipojuca, in Pernambuco, bringing development and influencing the lives of workers with the offer of technical level education by the Federal Institute of Education, Science and Technology. It also positively affected the higher education scenario with the opening of a Naval Engineer Graduation Course at the Federal University of Pernambuco (UFPE), which allowed CIPS to hire engineers in the region itself.

The creation of exchanges between Korea and Japan and the installation of companies from these places in the complex produced a demand for language courses, in addition to English, which also expanded, further increasing the networks.

The whole transformation was a result of the qualification of the local labor force and its involvement with the workers from the Southeast Region. Thus, CIPS companies, through a learning process, reckoned the notion that organizations should be in a continual state of improvement, to become something more than they are at their present.

In this way, organizational learning is used as a theme capable of containing all the dimensions of organizational changes, since the companies' capacity to learn would range from strategic formulations, design and redesign of organizational structures and processes, up to the transformation of their cultures.

As future studies, we suggest research works that assess the transformational impacts on CIPS workers and their relationship with company growth, as well as studies that are more focused on the individual and collective demands in the project organizations.

## REFERENCES

- Bento, D. F. C. (2011), A Questão Regional e Estudo de Caso sobre o Complexo Industrial e Portuário de Suape - PE. Anais do I Circuito de Debates Acadêmicos. II Conferência do Desenvolvimento (CODE). Brasília, DF – 23 a 25 de novembro de 2011. Disponível em: [http://repositorio.ipea.gov.br/bitstream/11058/3226/1/livro\\_anaisdocircuito01.pdf](http://repositorio.ipea.gov.br/bitstream/11058/3226/1/livro_anaisdocircuito01.pdf) (Acesso em 19 de dezembro de 2016).
- Buarque, S. C. (1999), Metodologia de planejamento do desenvolvimento local e municipal sustentável. Projeto de Cooperação Técnica INCRA/IICA PCT – INCRA/IICA. Brasília. Disponível em: <http://www.iica.org.br/docs/publicacoes/publicacoesiica/sergiobuarque.pdf> (Acesso em 12 de dezembro de 2016).
- Cassiolato, J. E. et Lastres, H. M. M. (2003) Arranjos e Sistemas Produtivos Locais na Indústria Brasileira, IE/UFRJ. Disponível em: [http://www.ie.ufrj.br/images/pesquisa/publicacoes/rec/REC%205/REC\\_5.Esp\\_05\\_Arranjos\\_e\\_sistemas\\_produtivos\\_locais\\_na\\_industria\\_brasileira.pdf](http://www.ie.ufrj.br/images/pesquisa/publicacoes/rec/REC%205/REC_5.Esp_05_Arranjos_e_sistemas_produtivos_locais_na_industria_brasileira.pdf) (Acesso em 20 de Janeiro de 2017).
- Cervo, A. L. et Bervian, P. A. (2002) Metodologia científica. 5.ed. Prentice Hall, São Paulo.
- Garvin, D. A. (2002), Aprendizagem em ação – um guia para transformar sua empresa em uma learning organization. Qualitymark, Rio de Janeiro.
- Granovetter, M. (1985), Economic action and social structure: the problem of embeddedness. American Journal of Sociology, Chicago, v. 91, n. 3, nov. 1985. <http://www.forumsocialmundial.org.br> (Acesso em 10 de janeiro de 2017).
- Gumiero, R. G. (2015), Dimensões do desenvolvimento do complexo industrial Portuário de Suape: política econômica e política social. São Carlos: UFSCar. 347 p. Tese (Doutorado) -- Universidade Federal de São Carlos, 2015. Disponível em: <https://repositorio.ufscar.br/bitstream/handle/ufscar/7685/TeseRGG.pdf?sequence=1> (Acesso em 03 de janeiro de 2017).
- Lemos, H. V. & Jesus, P. (2015), Desenvolvimento industrial e conflitos de terra: desafios do desenvolvimento local frente à questão fundiária entre a comunidade de Massangana e o Complexo Industrial de Suape-PE. GeoTextos, vol. 11, n. 2, dezembro 2015. H. Lemos, P. Jesus. 177-194. Disponível: <https://portalseer.ufba.br/index.php/geotextos/article/view/13451> (Acesso em 05 de Dezembro de 2016).
- Medeiros, M. C., Ramalho, A. M., Almeida, F., Carvalho, G. & Santiago, L. (2014). Os impactos do Complexo Industrial Por-



- tuário de Suape – CIPS nos municípios do Cabo e Ipojuca. ARIC – Faculdade Damas da Instrução Cristã ArchitectoN - Revista de Arquitetura e Urbanismo, Vol. 4, No. 7, 2014. Disponível: <http://www.faculadadedamas.edu.br/revistas/index.php/arquitetura/article/viewFile/374/394> (Acesso em 21 de dezembro de 2016).
- Oliveira, R. V. (2013), SUAPE em construção, peões em luta: o novo desenvolvimento e os conflitos do trabalho. CADERNO CRH, Salvador, v. 26, n. 68, p. 233-252, maio/ago. Disponível em: <http://www.redalyc.org/pdf/3476/347632191003.pdf> (Acesso em: 03 de janeiro de 2017).
- Pádua, E. M. (1997) M. de. Metodologia da pesquisa: abordagem teórico-prática. 2. ed. Papirus, Campinas.
- Porto, G. A. (2008), Aprendizagem organizacional: um estudo das empresas vencedoras na etapa nacional do Prêmio FINEP de Inovação Tecnológica. Dissertação (mestrado profissional) – Universidade Federal da Bahia. Escola de Administração. 140 f. Disponível em: <https://repositorio.ufba.br/ri/bitstream/ri/8050/1/555555.pdf> (Acesso em 17 de dezembro de 2016).
- Salviato, S. (1999), Uma Metodologia de solução de problemas com enfoque na aprendizagem organizacional: um estudo de caso aplicado no BESC. Dissertação (Mestre em Engenharia de Produção) - Programa de Pós-Graduação em Engenharia de Produção, Universidade Federal de Santa Catarina, SC.
- Senge, P. M. (1990) A quinta disciplina. Editora Best Seller, São Paulo.
- Silva, F. H. (2008), Educação Setorial para Formação de Competências Básicas Individuais: o caso da parceria do Governo do Estado de Pernambuco com o SESI/SENAI para atender às demandas das indústrias no complexo de Suape. Dissertação (mestrado) – Faculdade Boa Viagem. Administração. – Recife: O Autor. 106 folhas. Disponível em: <http://imagens.devrybrasil.edu.br/wp-content/uploads/sites/88/2015/01/17155726/FERNANDO-HALINSKI-DA-SILVA.pdf> (Acesso em: 17 de dezembro de 2016)
- Silva, M. F. & Rodrigues, C. (2011). Estudo comparativo da competitividade entre os portos de Suape, Salvador e Pecem, sob a ótica dos custos, do tempo e da segurança. Revista de Iniciação Científica, Vol. 1. Disponível em: <http://www.fcipadm.br/wp-content/uploads/2014/07/RIC-V01-ESTUDO-COMPARATIVO-DA-COMPETITIVIDADE-ENTRE-OS-PORTOS-DE-SUAPE-SALVADOR-E-PEC%3%89M.pdf> (Acesso em: 03 de Janeiro de 2017)
- Teixeira, E. C. (2002), O Papel das Políticas Públicas no Desenvolvimento Local e na Transformação da Realidade Políticas Públicas - O Papel das Políticas Públicas - AATR-BA, disponível em: [http://www.dhnet.org.br/dados/cursos/aatr2/a\\_pdf/03\\_aatr\\_pp\\_papel.pdf](http://www.dhnet.org.br/dados/cursos/aatr2/a_pdf/03_aatr_pp_papel.pdf) (Acesso em: 21 de janeiro de 2017)
- The National Economic and Social Forum. (2003), The policy implications of social capital. Dublin, 157 p. (Forum report, n. 28).
- Triviños, A. N. S. (1987), Introdução à pesquisa em ciências sociais: a pesquisa qualitativa em educação, Atlas, São Paulo, 175p.
- Valente, A. (2001), Governo empreendedor e estado-rede na gestão pública brasileira. In. Cadernos da Fundação Luís Eduardo Magalhães. 1ª edição. A gestão pública: desafios e perspectivas. FLEM,.112p. (Cadernos FLEM, 1), Salvador.
- Vergara, S. C. (1998), Projetos e Relatórios de Pesquisa em Administração. Atlas, São Paulo.
- Yin, R. K. (2001), Estudo de Caso: planejamento e métodos. Bookman, Porto Alegre.