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Research article

Competencies for sustainability: A proposed method for the analysis of their interrelationships

Ana Claudia de Oliveira, Carla Cristiane Sokulski *, Alamo Alexandre da Silva Batista, Antonio Carlos de Francisco

Department of Production Engineering, Federal Technological University of Paraná, Brazil

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ABSTRACT

This article proposed a method of analysis of the interrelationships between sustainable development and organizational competencies, identifying methodologies and assessing parameters of such interrelationship. To that end, a literature research was done through a document analysis, assessing the content of sustainability reports and questionnaires of the Corporate Sustainability Index (CSI) of the Brazilian company Natura. By applying the method developed in this work, the core competencies were identified, also listing the sustainable strategic resources. As a result, the Natura has as core competencies: unique relationship network, products, concepts and especially the management based on the Triple Bottom Line principles. These competencies allow Natura to reposition their products when improving indicators such as poverty and inequality (i.e. with the aim of improving the company's reputation and increasing the brand's legitimacy to consumers) and, thus, to produce more value for its shareholders, becoming a classic example of a company that knew how to implement the Sustainable Value model. The main contribution of this work is to structure an analysis method based on the literature that interrelates organizational competencies to the sustainable development in companies.

1. Introduction

Sustainability is gaining space in scientific research and it can also be explicitly found in the strategic guidelines of organizations and business' speeches. In addition, there have been considerable changes in thinking about social and environmental improvements in businesses. Thus, the challenges set by sustainability have become central to the transparency of the environmental, economic and social impacts, so it can be noted some efficiency in relationships with stakeholders in future investment decisions or in trade relations.

The pioneer to spread the word sustainability was the sociologist John Elkington, who was in the spotlight when creating important concepts such as the Triple Bottom Line, in which he sets out the three aspects of sustainability — Planet (health of the Environmental Systems), people (human capital), and income (economic product). However, the concept of sustainable development has become widely used in the world after the Brundtland Report (Our Common Future), which was published by the United Nations World Commission on Environment and Development — WCED (1987). In this report, the sustainable development is defined as the development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development — WCED, 1987, p. 8).

Since the report's publication in 1987, and later the spread of the concept of sustainability, the understanding of these definitions has undergone several transformations. In the view of authors like Coffman and Umemoto (2010), Moldan et al. (2012) and Jepson (2003), the significance of sustainability and sustainable development is not the same, although the fundamental meaning is essentially the same.

On the issue of sustainability comes the importance of the Resource Based View — RBV, considering that the company is a resource portfolio, both organizational and intangible, or human resources (Wernerfelt, 1984; Barney, 1991; Barney et al., 2001). RBV considers that companies achieve high performance by developing competencies and having unique resources, of high-value and difficult imitation, where the set of these attributes causes the achievement of competitive advantage over the competition (Ada, 2013).

Organizational competencies consist of the strategic alliance of skills, knowledge and organizational resources that reside on a function, such as research and development, or manufacturing and logistics, which contribute to the development of

* Corresponding author.
E-mail addresses: anac@utfpr.edu.br (A.C. de Oliveira), carlac@utfpr.edu.br (C.C. Sokulski), alamobatista@utfpr.edu.br (A.A. da Silva Batista), acfrancisco@utfpr.edu.br (A.C. de Francisco).

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competitive advantage and also subsidize the creation of value for the organization. Therefore, a company should be able to capture, transfer, assimilate and apply competencies to achieve competitive advantage in the market position it occupies (Liao et al., 2011).

Some authors report an association between the competencies and performance of the company, highlighting the essential value that competencies have (Wernerfelt, 1984; Prahalad and Hamel, 1990; Barney, 1991). Thus, the RBV has been recommended as a foundation for the study of sustainability issues (Hart, 1995; Guang Shi et al., 2012), with its focused relevance on the use of internal resources and capabilities that determine competitive advantage to the organization.

While most of strategic management researchers have used the RBV theory, its popularity also has been growing gradually in the field of production and operational management (Schoenherr, 2012). RBV can provide a valid theory to explore the competitive advantage due to its resources, and it can also be used to support sustainable development practices within organizations.

In this context, the objectives of this work are: (a) proposing a method of analysis of the interrelationships between sustainable development and organizational competencies; (B) identifying the methods and parameters necessary to evaluate the interrelationship of organizational competencies and sustainable development; (C) building the analysis matrix of the interrelationships among the topics proposed; (D) applying the method of analysis in a practical case; (E) identifying the main sustainable organizational competencies of the company object of this research.

To achieve such objectives, it is presented a method that describes the process of identification of the core competencies, key capability and special resources that underpin the sustainable development strategies. In addition, it can be considered a relatively simplified guide identification, resulting in a contribution to the structure of the organizational knowledge related to sustainability.

The significance of this work is highlighted by proposing a method of analysis of the interrelationships between sustainable development and organizational competencies, since they are important for organizations to build the necessary foundations to serve the three pillars that support the Triple Bottom Line approach: economic, social and environmental (Elkington, 1999).

Thus, the importance of this study lies on structuring a method of analysis based on the literature that interrelates organizational competencies to the sustainable development in companies.

It was decided to conduct a case study at Natura, since it was ranked as 2nd in the Corporate Knights list in 2013 and ranked as 23rd (Ranking 2014). The other Brazilian company mentioned in the two consecutive years of that list is the mining company Vale. The choice of Natura was due to the fact that the research seeks to portray the Brazilian reality and, also, by accessibility to the formal documents issued by the company. It should be noted that the company, object of this study, was one of the pioneers in Brazil to publish its sustainability reports based on the GRI model.

This study is structured as follows: the first section corresponds to the introduction, the second presents the methods used to conduct the present study, followed by the application, results and discussion, whereas the last one draws the research conclusions.

1.1. Related studies

Bai and Sarkis (2013) studied business process management (BPM) to help managers make more appropriate strategies. The field study was carried out in three Chinese manufacturers obtaining as main results four factors namely: strategic alignment, managerial support, project management and collaborative environment. Which support the idea of participative need of the company as a whole, when it is intended to take new actions, mainly in the context of sustainability.

In the mining industry, a study on the management of green supply chain (GSCM) conducted by Kusi-Sarpong et al. (2015) was carried out. The objective was to present general factors and practices that support GSCM programs, especially in mining industries. Later, in 2017, Bai et al. (2017), based on the perception of the use of the GSCM practices by the miners, analyzed GSCM practices by Ghana gold miners. The results show that companies must first develop with suppliers a Strategic Supplier Partnership (SSP) and implement Green Information Technology and Systems (GITS) and other GSCM practices to integrate company policies and actions into green initiatives.

In 2017, Badri Ahmadi et al. (2017) carried out a study proposing a framework for research on social sustainability in the supply chain. The "best worst method" (BWM) multicriteria method was used for a sample of 38 employees of manufacturing companies and the main sustainability criterion identified was the "contractual influence of stakeholders". The result can help managers know where to better focus their attention in moments of strategic decision-making and implementations, especially with a view to sustainable development.

Kusi-Sarpong et al. (2016a, b) presented a framework for sustainable development. This was also developed by means of studies in the gold miners in Ghana and the framework included six constructs: green information technology systems, strategic supplier partnership, operations and logistic integration, internal environmental management, eco-innovation and end-of-life. From the evaluation models, the researchers identified that the strategic supplier partnership and end-of-life practices have a larger influence on the companies' green operations.

Finally, Kusi-Sarpong et al. (2016a, b), also using sampled gold mining companies in Ghana, presented through a framework the main practices of GSCM that impact the triple bottom line of the mining sector. From the results, guidelines that assist in the decision-making regarding the improvement of production and sustainable corporate consumption are provided.

Based on the studies presented, a great emphasis is placed on the scope of sustainable competencies in the mining sector, which reinforces the importance of research in sectors other than this, such as the present case in the cosmetics industry, which has shown to be incipient so far.

2. Methodology

2.1. Proposed analysis method

To analyze the interrelationships between organizational competencies and sustainable development, a reference method is proposed, which was prepared using literature review and adjusted by its application in a practical case.

As a mechanism of bibliographic information gathering, bibliometric research was used, which consists of an analytical approach to evaluate and measure a wide range of scientific publications (Bouchard et al., 2015). From the bibliometric research, the current framework of studies related to the themes chosen for the investigation is established. The research was conducted on the main bibliometric scientific databases (i.e., indexed systems) within the CAPES periodical portal: Web of Science (Thomson Scientific/ISI Web Services), SAGE Journals Online, SCOPUS (Elsevier) and Science Direct (Elsevier).

The data collection was performed using the advanced research engine in the selected databases, using as descriptors (i.e. keywords) of the subjects: ("sustainab*" AND "resource based view") OR ("sustainab*" AND "resource based theory") present in the keywords, title and abstract fields. The period studied ranged from 1970 to June 1st, 2013, noting that it has been selected since the first definition of "sustainability/sustainable development" originated in the seventies and the gathering took place in June 2013.

Table 1
Studies that propose competency mapping models.
Source: Research Authors, 2016.

Authors	Year	Objective
Netland; Aspelund	2013	The work proposes an updated and adequate VRIN model for the understanding of the relations between the XPS (company specific production system) and the competitive advantage. The company's resource-based view provides the theoretical basis for this analysis.
Sehneni et al.	2012	The objective of the paper was to specify, according to the classification used by Barney (1991) and Hall (1992), the tangible and intangible resources used by an organization to establish its environmental sustainability strategies.
Khani et al.	2011	The article provides a review of the studies related to the research of organizational capacities and, finally, proposes a conceptual model that indicates the relation between the organizational capacities, organizational performance and strategic planning.
Gallego-Álvarez et al.	2011	The paper analyzes the bidirectional relationship between CSR practices and innovation, according to the Resource Based Theory (RBT). This study defines a model in which CSR practices are a function of innovation, activity sector, company size and risk.
Zhan et al.	2009	The study examines how the competitive advantage of international joint ventures (JVIs) in transition economies is affected by the acquisition of resources from foreign partners and resources based on the local market. For the authors, these results bring significant incremental theoretical and empirical contributions, both for RBV and for JVI literatures.
Rodriguez-Diaz; Espino-Rodriguez	2008	The study presents a strategic evaluation model, analyzing the internal and relational capacities of each attribute represented in an array according to its strategic value.

The truncation symbol "∗" was used to maximize results, because this symbol recovers expressions of the same radical, plurals and spelling variations of the keywords.

From this piece of research, it was obtained as a result the amount of 786 articles with the theme of sustainability under the approach of the RBV, totalizing 1700 authors. The largest concentration of publications on the subject is in the Strategic Management Journal. The main studies used to carry out this piece of study are presented in Table 1.

The bibliometric research provides the conceptual basis and the parameters needed for the construction of the proposed analysis method, which was consolidated by applying it in a practical context. In this case, the application was made through a documentary analysis of the company Natura, because the company is internationally recognized for its practices related to sustainability.

The challenge of sustainability is characterized as urgent and complex. To each organization, the strategy to be chosen to meet this challenge will be different. However, structural arrangements will be required to make changes in order to manage this new form of development.

The OEDC (2001) defines a sustainable development strategy as comprising a coordinated set of participatory processes and continuous improvement of analysis, debate, and capacity building of planning and investment, which integrates the economic, social and environmental society.

In light of that, there is the assumption that companies that seek strategic management through sustainability are in constant process of forming alliances that collaborate to their processes of transformation and achievement of their objectives. Thus, these alliances and their results are influenced by environmental factors — strengths and weaknesses, opportunities and threats, since they are part of open systems (D'Angelo, 2009).

Sustainability in the company, therefore, promotes the relationship between environmental and cultural diversities, through local, regional, national or international alternatives, which allow for the enhancement of the company's resources. In the same way, implementing sustainability in the organization becomes a challenge, since it requires the transformation of several dimensions. These include: mission, corporate and competitive strategy, core competencies, formal structures and processes, organizational culture and performance criteria, since sustainability needs to be among the company's values, as its practice will take place through the habits of that organization, as well as of its human resources (Becker et al., 2002; D'Angelo, 2009).

Consequently, the companies must have high performance mechanisms or routines as the dynamic capacities by Teece et al. (1997). This will enable the company to update existing competencies as well as to add new ones, since as already reviewed, it is the dynamic capacities that allow the company to transfer, adapt and reconfigure internal and external competencies towards the change of environment (Teece et al., 1997; Yang, 2010; Macher and Mowery, 2009).

For this, it is imperative for the company to map its organizational competencies, including those focused on sustainability.

2.2. Construction of the method for analysis of the interrelationship between organizational and sustainability competencies

This method takes place in two stages of identifying organizational competencies, which are indicators of a company's sustainable development.

1st *Phase* — Survey of core competencies: to determine the extent of the competency by performing a content analysis of corporate documents. In this case, CSI sustainability reports and questionnaires. An assumption at this phase is in the strong evidence of corporate organizational competencies to be identified in the documents elaborated and maintained by the company to support sustainable development, which makes it possible by the application of these competencies.

The choice of CSI sustainability reports and questionnaires for the analysis of companies is because these instruments reflect the essential criteria to the stakeholders weighted by senior management (Rondinelli and Berry, 2000). Moreover, the analysis of the content of independently produced documents raises the prospect of organizational competencies and processes aimed at the sustainable development.

In the content analysis, the recorded communication is categorized by indicative codes of the phenomena under study, and then the occurrences of the codes are analyzed, systematically evaluating the qualitative content in all forms of communication, for example, writing, interview, news or reports (Tangpong, 2011). This technique allows the inferences to be made to be legitimized by other data gathering methods (Montabon et al., 2007; Tangpong, 2011; Hofer et al., 2012). The content analysis process occurred from the following steps:

(i) Thematic Analysis: the thematic analysis is given where the grouping is affected by units of common meanings. For the categorization of variables, the procedure was applied for "thousand" which sets the conceptual basis for each category at the end of

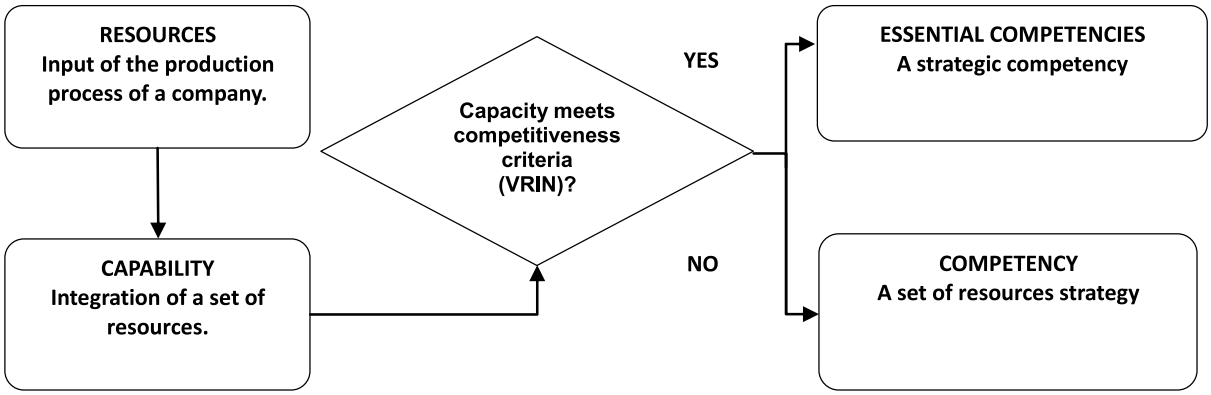

Fig. 1. Flowchart for ratings of organizational competencies.
Source: Hitt et al. (2012).

Table 2
Frame for evaluating strategic organizational competencies.
Source: Adapted from Hitt et al. (2012).

Capability is valuable	Capability is rare	Capacity is difficult to imitate	Capability is irreplaceable	Competitive consequences	Performance implications
No	No	No	No	Competitive disadvantage	Returns below average
Yes	No	No	Yes/No	Competitive parity	Average returns
Yes	Yes	No	Yes/No	Temporary competitive advantage	Average returns and above average returns
Yes	Yes	Yes	Yes	Sustainable competitive advantage	Above average returns

the operation. The criteria used to determine the presence of a competency was to analyze the researched documents, the presence of some reference on competencies, abilities, or similar words to present the idea of organizational competencies linked to the companies' sustainability processes;

(ii) measurement criteria of sustainable strategic organizational resources: After that identification, the next stage is based on identifying common groups to reach the general categories. As criteria for identifying sustainable strategic resources, sustainability indicators built in this work are used from the literature review and the main guidelines for evaluating sustainability. A series of guidelines is found in the literature to assist in the selection of indicators for sustainability reports. The guidelines used in this study were: Global Reporting Initiative — GRI (2011), Framework by the United Nations Commission on Sustainable Development (CSD), Sustainability Metrics of the Chemical Engineers Institution — IChemE (2002) and Dow Jones Sustainability Inex — DJSI (2008).

(iii) Identification of capabilities related to sustainable principles: using a flowchart (Fig. 1), obtained by literature review, the criteria are applied to consider whether a given capability is a core competency.

Considering that the capabilities are the grouping of resources, the assessment of these capabilities was made using the model proposed by Barney (1991), called VRIN (valuable, rare, inimitable and non-replaceable) or the VRIO model (valuable, rare, inimitable and organized) as it is known in Brazil. In this work, the name "VRIN Model" was adopted, as described in Fig. 1.

(iv) Competencies assessment: with the application of the VRIN model it is possible to group the competencies in the Framework for Strategic Organizational Competencies Assessment, identifying which are essential for the company to develop strategies aimed at sustainable development and using as parameters Barney's VRIN model (1991) restructured by Hitt et al. (2012), as it can be seen in Table 2.

Table 2 shows the competitive consequences and implications on the performance resulting from the combinations of the Competitive Advantage criteria (i.e. VRIN model), helping to determine the strategic value of the organizational capabilities, the capabilities that are not valuable, neither rare, and easily imitable should not be emphasized since they have strategic substitutes. As for the capabilities that generate competitive parity, temporary or sustainable competitive advantage should be supported by the organization (Hitt et al., 2012).

2nd *phase — Matrix Constructs:* to verify and review the results of the content analysis, integrating them in a competency matrix.

Fig. 2 shows the summary of the construction methodological process of the interrelationship matrix of organizational competencies and sustainable development.

With the implementation of the method synthesized in the Matrix, it is possible to find the organizational competencies covering the three basic categories of sustainability (i.e. environmental, social and economic). The identification of core competencies is vital for companies to create value to exploit market opportunities. Once these core competencies are identified, managers can analyze the possible opportunities to reach new markets or to develop new products with appropriate technology, for the growth of business based on the three categories of sustainability.

3. Application, results and discussion

3.1. Analysis of the strategic guidelines of Natura company

In the process of identification of organizational competencies, it is important to map the strategic guidelines (i.e. mission, vision, values and organizational goals) through the analysis of the documents that comprise the organization's strategic planning, since these documents denote the organization's objectives before its needs (Randall and Cassels, 1979).

From the analysis of the strategic guidelines of Natura, the sustainability-related issues (e.g. triple bottom line) appear strongly inserted in the company's strategic planning (Elkington, 1999). Natura shows from its actions, strategic aspects of the commitment to the sustainable development. Such information is arranged in the Vision, Reason for being (i.e. Mission) and the company's beliefs (i.e. Values), which made the analysis of the

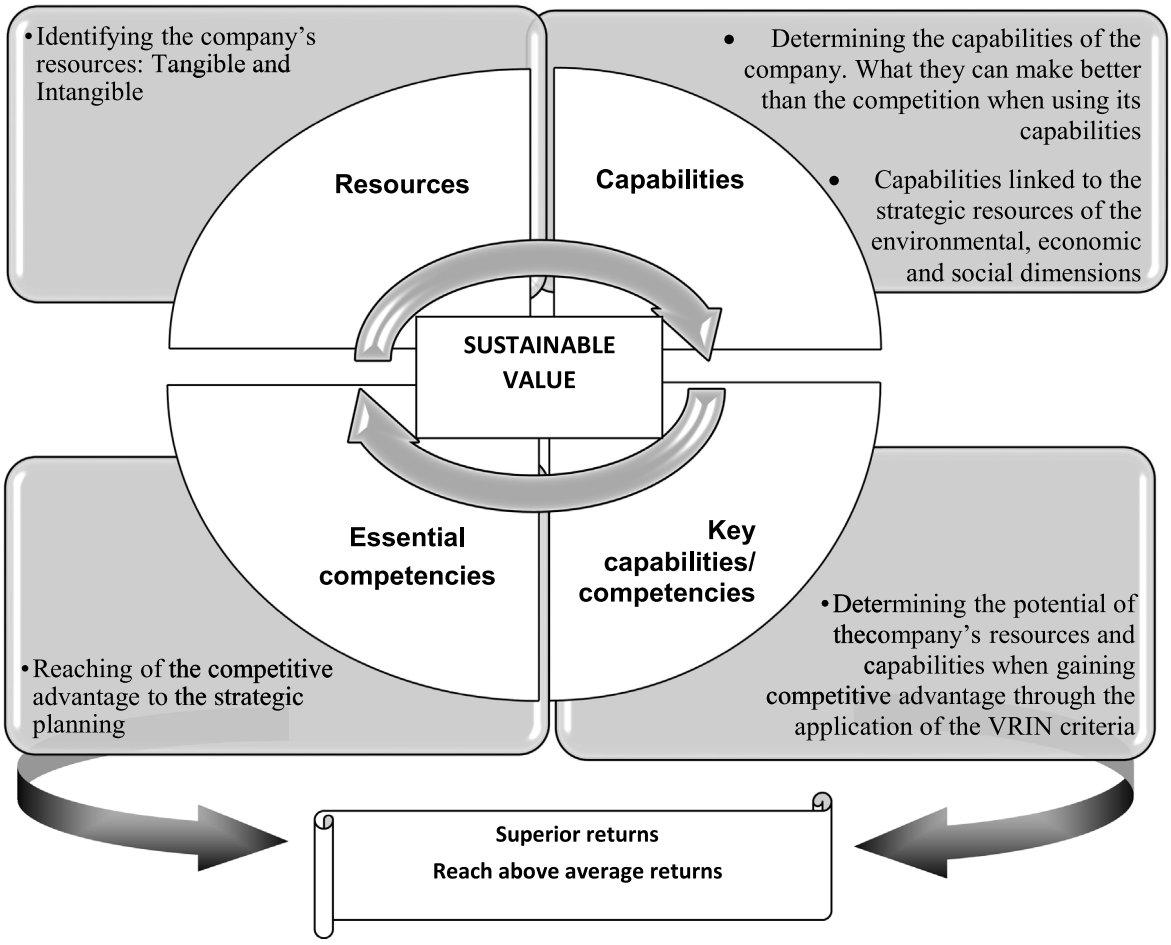

Fig. 2. Matrix summarizing the method of analyzing the interrelationships between organizational competencies and Sustainable Development.
Source: Research Authors, 2016.

organizational speech by keywords found in the cited documents, as illustrated in Fig. 3.

As it can be seen in Fig. 3, the keywords found in the company's Mission, Vision and Beliefs are related to its core competency in establishing a relationship network, innovative products and services and their style of management based on sustainable principles.

Having the theoretical framework been defined, the core competencies are the source of competitive advantage and underpin all business' strategies, reflecting the organization's personality (Hitt et al., 2012).

Natura's public commitment to sustainable development has been proven in documents and practical actions that guarantee the fulfillment of these commitments, which are directly related to the "Triple Bottom Line" concept and reflect a broad and unrestricted strategic commitment of the company with this approach. It is also possible to relate this commitment to the organizational competencies, which are the set of internal resources necessary to achieve this form of business management chosen by the company.

Hitt et al. (2012) consider that the number of core competencies recommended to each organization varies from three to four, around which its strategic objectives are structured. It can be considered that through this first analysis, Natura's core competencies are: relationship networking, innovative products and concepts and its style of business management, based on the triple bottom line principles.

This conclusion was based on the fact that these three competencies are strongly present in strategic speeches, in which all the company's actions are unfolded. However, there are tools to help identify/verify the core competencies. Among these tools is the VRIN model, developed by Barney (1991).

3.2. Assessing sustainable strategic organizational resources

When considering that organizational competencies are formed by certain competencies and capabilities that, in turn, are built with the harmonic set of resources, it is necessary to evaluate these organizational resources. The process was carried out with the application of the Assessment Table of Sustainable Strategic Resources, which is unfolded in three dimensions, namely: Environmental, Economic and Social.

3.3. Analysis of sustainable strategic resources — environmental dimension

Table 3 summarizes the main indicators of sustainable resources inserted in the environmental dimension of the Triple Bottom Line.

From these data, it is possible to view the capabilities linked to environmental indicators in which the company stands out:

(a) *Capability of Optimizing Air Resources*: among the management strategies of Greenhouse Gases (GHG), a complete view of the life cycle was included. Moreover, innovations have been being implemented over the years to reduce CO2 emissions, such as the Carbon Neutral Program, the use of organic alcohol in fragrance formulations and the Less Carbon More Productivity Program. In 2011, only with the relaunch of the EKOS line (i.e. redesigned

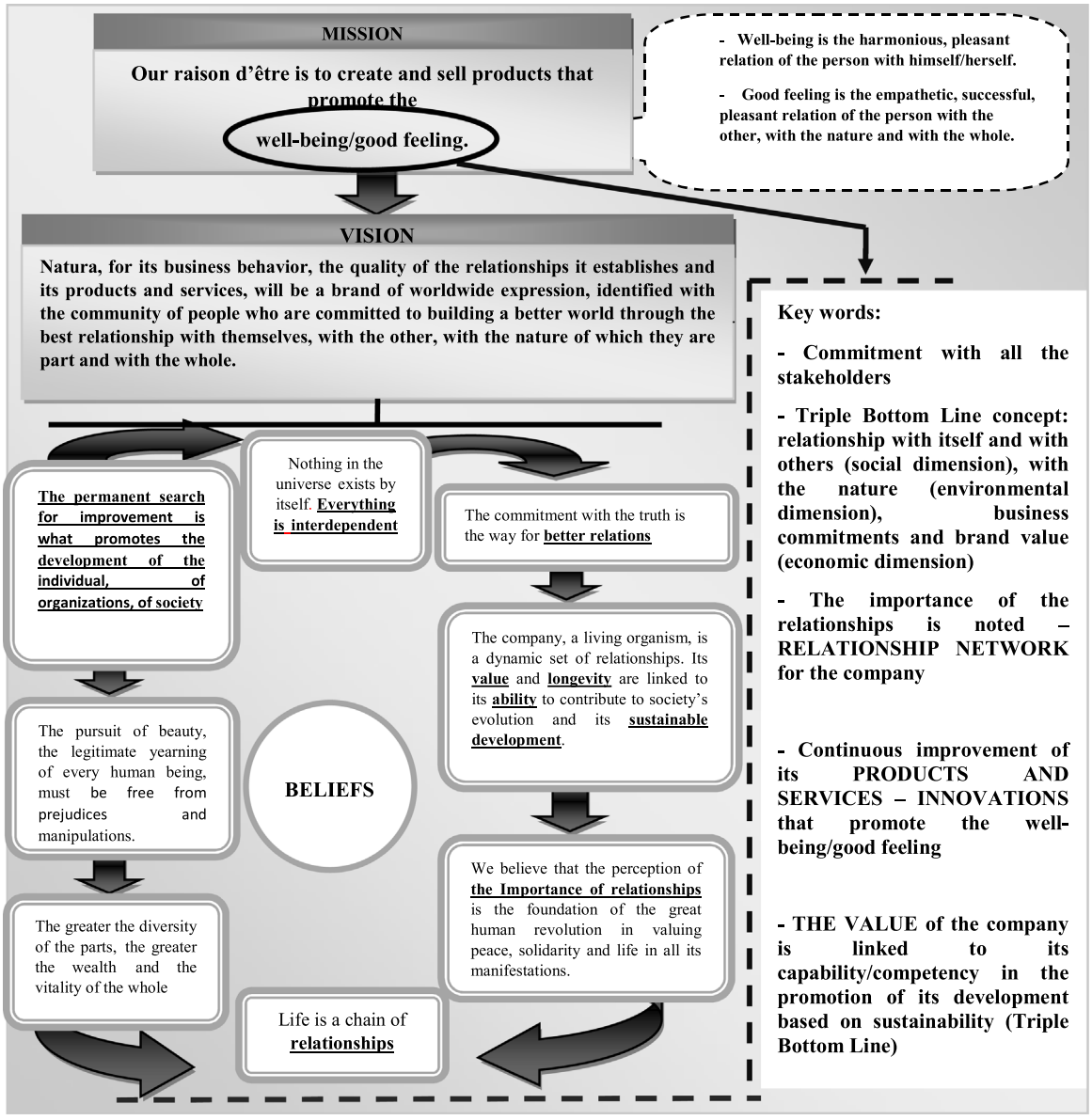

Fig. 3. Analysis process of the organizational speech expressed in the strategic documents.
Source: Research Authors, 2016.

cartridges and packaging) it was possible to reduce the company's GHG emissions by 45%, compared to previous years.

To Natura, all emissions not possible to be avoided are offset through carbon credit purchases from projects of energy efficiency, reforestation, alternative fuels or waste treatment and REDD+ (Reducing Emissions from Deforestation and Degradation).

(b) *Capability of Optimizing Water Resources*: In this capability, among the optimization actions are included the methodology for calculating the water life cycle impacts. For instance, it is possible to emphasize projects such as the Calculation of the Water Footprint, where it was found that the greatest impact, 45.9%, was in the final stage of disposal by the consumer. Among other actions, it is possible to mention: monthly monitoring of water consumption and conservation of the relative water consumption, even with increased production. In this regard, it is noted that the company has managed to maintain the relative water consumption of 0.40 L/unit produced, but failed to meet its own target which was 0.39 L/unit. Another negative point was the increased drinking water consumption in the production process at one of its industrial plants, due to a technical problem in the sewage treatment station, which resulted in less use of reused water.

It is also reported that, over the period studied, there was an increase in the percentage of water usage from the sewage treatment station, which was used in industrial processes for steam generation in boilers. With the development of the new effluents reuse system, water purity was increased. This is an evolution, for until 2011 the liquid effluents were used only for irrigation and cleaning.

(c) Capability of Optimizing Earth's Resources — soil and energy: it is possible to mention in this capability the company's strategies for managing solid waste, such as developing an inventory that accounts for a large portion of the chain (except the supply of raw materials). The optimization can also be checked on the eco-efficiency actions, such as the reduction in energy relative consumption, considering the energy expenditure per unit of production. In addition, the company keeps track of the energy consumption of third party providers (i.e. those who manufacture finished products for this company). Moreover, clean fuels (e.g. LPG, ethanol and briquette) are used as a source of energy in boilers of factories.

Table 3
Table of sustainable strategic resources indicators — environmental dimension.
Source: Based on Natura annual reports (2012, 2013, 2014).

Associated capability	Sustainable strategic resources — environmental dimension				
	Indicators	Unit of measure	2011	2012	2013
Capability of optimizing air resources	Emissions of greenhouse gases (global warming) GHG	Thousands of tons	265	280	313
	Emissions that reduce the ozone layer	–	Non-generating	Non-generating	Non-generating
	Emissions of other gases generating air pollution	–	n.i	n.i	n.i
	Emissions with effects on human health (carcinogenic)	–	n.i	n.i	n.i
	Atmospheric acidification	–	n.i	n.i	n.i
	Emissions producing photochemical air pollution	–	n.i	n.i	n.i
	Concentration of pollutants in urban/local areas	–	n.i	n.i	n.i
Capability of optimizing water resources	Quantity — total water consumption	M[c]	247.948	250.177	290.859
	Quantity — net consumption (total — recycled)	Percentage	36%	57%	54%
	Quantity — water consumption in relation to the total available	Percentage	n.i	n.i	n.i
	Quantity — recycled and reused water consumption	M[c]	41 630	69 465	79 366
	Quality — chemical discharges, oils and fuels (treated)	Mg/l	71[a]	55[a]	65[a]
	Quality — concentration of fecal coliforms in drinking water	–	n.i	n.i	n.i
	Quality — Biochemical oxygen demand in the water (BOD)	mg/l	77[b]	106[b]	289[b]
	Quality — ecotoxicity to the aquatic life	–	n.i	n.i	n.i
	Quality — water acidification	–	n.i	n.i	n.i
Capability of optimizing the Earth's resources — soil and energy	Solid waste (direct and indirect)	t	12.275	15.211	16.214
	Reused and recycled solid waste compared to the total generated	Percentage	89%	87%	83%
	Occupied land	M[b]	2462.5 mil[c]	2462.5 mil[c]	2626 mil[c]
	Land restored to its original condition (reforested)	M[b]	*	*	*
	Hazardous solid waste generated	t	n.i	n.i	n.i
	Non-hazardous solid waste generated	T	n.i	n.i	n.i
	Direct power consumption (renewable or not)	TJ	1977	2263	2466
	Energy consumption from renewable sources	TJ	1512	1965	2326
	Consumption of recycled raw material and used waste (except water)	Percentage	1,1%[d]	1,6%[d]	1, 4%[d]
	Consumption of raw material that causes risks to human health	Percentage	n.i	n.i	n.i
Manageability and environmental pólipo	Strategic preparation and environmental management policy		Yes[e]	Yes[e]	Yes[e]
	Framework for environmental management		Yes[e]	Yes[e]	Yes[e]
	Existence and external disclosure of environmental targets		GRI	GRI	GRI

Notas:
(*) Natura works with compensation through the purchase of carbon credits.
(n.i) Not identified in the documents consulted.
[a] Sum of the three production units, where the legal parameter is 120 mg/l for each unit.
[b] Sum of the three production units, where the legal parameter is 60 mg/l for each unit.
[c] Natura's main operations in Brazil are located in their own lands, and the company claims that it invests in the restoration and conservation of these territories, as foreseen in the granted environmental permits. The exception is the Nasp in São Paulo, which area of 111,700 m^2 is rented. The Nasp, which opened in February 2013, concentrates administrative and logistics activities, such as storage and distribution.
[d] The percentages refer to the embedded post-consumption recycled material in Natura's finished product packaging.
[e] Actions in which numerical indicator criteria were not established.

(d) Manageability and Environmental Policy: the company has reflected it in their environmental policy planning, adopting procedures that align its value chain with these policies. This commitment is evidenced in its management programs, goals and results.

The results presented are in line with the concepts presented by Elkington (1999) and also defended in the Brundtland report (1987).

3.4. Analysis of sustainable strategic resources — economic dimension

Sustainable resource indicators inserted in the economic dimension of the Triple Bottom Line are highlighted in Table 4.

The data presented enables the visualization of the capabilities linked to economic indicators in which the company excels. Natura is distinguished by the constant evolution of its net profit in the period 2011–2013, as well as by increased sales, even with the slowdown of the Brazilian economy in the highlighted period. The results confirm the company's ability to achieve profitability even in difficult times for the economy, while it conducts significant investments in areas such as R&D related to sustainability as defended by Hitt et al. (2012) and Elkington (1999).

3.5. Analysis of sustainable strategic resources — social dimension

Table 5 compiles the main sustainable resources indicators included in the social dimension of sustainability.

Table 5 shows the capabilities related to social indicators in which the researched company stands out:

(a) Manageability of labor and human rights practices: between the years 2011–2013 there was no significant change in the total number of employees, with a relative increase in new signings from 2012. In addition, the turnover rate increased in 2012 and fell again in 2013, reaching one of the company's lowest levels over the years, but the reduction was not enough to achieve the 7% target for the year. This result, according to the company, was due to changes in professional development plans, highlighting the operational staff.

As for the absenteeism, the company claims a systematic monitoring of employees, identifying the main reasons for absences, through consultations with the occupational physician and the assessment process with a multidisciplinary team when necessary. In 2013, the absenteeism was reduced by 21%, which means an absenteeism rate of 3.12%, while no new cases of occupational disease occurred in the same year. In addition, there was an increase of 73% in investment in prevention of occupational accidents;

(b) Manageability of policies related to the corporate Society/Citizenship and philanthropy: the generation of value through a strong relationship network with all its stakeholders is a strength of Natura's management. The company seeks to maintain a good relationship with the surrounding communities, conducting specific actions that contribute to local development, such as generating links with residents and creating a positive agenda with the

Table 4
Table of sustainable strategic resources indicators — economic dimension.
Source: Based on Natura annual reports (2012, 2013, 2014).

Associated capability	Sustainable strategic resources — economic dimension				
	Indicators	Unit of measure	2011	2012	2013
Profitability capability	Sales	Thousands R$		7 608 134	8 021 958
	Net profit	Millions R$	5591.40	6345.70	7010.30
	Gross margin		n.i	n.i	n.i
	Costs of products, goods and services	Thousands R$	2 375 514	2 843 755	2 770 923
	Average invested capital		n.i	n.i	n.i
	Return on investment rate		n.i	n.i	n.i
	R & D expenses (organic)	Millions R$	0.4	0.6	1.2
Capability of relationship with investors	Dividends paid	Millions R$	467.3	469.5	470
	Regular study of the investor's perception and dissemination of results		n.i	n.i	n.i
	Transparency of the programs of share distribution to employees		n.i	n.i	n.i
Capability of crisis management and economic structure	Crisis management plan		n.i	n.i	n.i
	Organizational structure for the company's reputation management		n.i	n.i	n.i
	Economic performance		n.i	n.i	n.i
	Trade — balance of payments		n.i	n.i	n.i
	Financial situation		n.i	n.i	n.i
	Inflation		n.i	n.i	n.i
Capability to establish consumption and production patterns	Materials consumption	T	22 170	22 540	23 069
		M3	11 279	10 832	10 949
	Energy use (consumption, use of renewable energy, intensity of use)	TJ	158.4	160.8	176.5
	Management and generation of solid, toxic and radioactive waste		*	*	*
	Patterns of consumption and production — transport	(t of CO_2 E)	55 546	56 835	64 491

Notes:
(*) Not totaled.
(n.i) Not identified in the documents consulted.

government. It is possible to mention, for example, the allocation of 1% of the income tax owed by the company to the Municipal Councils for Children and Adolescents (CMDCAs) of Cajamar (SP), São Paulo Castanhal (PA) and Jaboatão dos Guararapes (PE). As a weak point of this company, it is possible to mention the lack of measurement of the negative impacts of its production activities in the surrounding communities;

(c) Capability related to product responsibility: a strong point of Natura is the relationship maintained with the consumer. For example, in 2013, Natura launched the project Radical Transparency, which provides information to the public, for an increase of the conscious power of decision. In addition to that, there are programs such as monitoring of products on the market and complaints' assessment of possible adverse reactions.

(d) Capability of talent retention: the company argues that its strategy in personnel management is focused on attracting and retaining employees who are aligned to its Mission and Vision, either by attracting new professionals in the market or by internal use through promotions, after performance analysis. Natura's remuneration and performance strategy, according to the company, makes it hold a place among the top 25% of companies in the country who offer the best salaries in the market.

(e) Capability of assessment and partnership with suppliers: the commitment to relationship networking is once again highlighted, including the supply chain that consists of more than five thousand commercial partners in Brazil in its strategic planning. One such action is the Chain of Sustainable Supplies, a methodology built by Natura, which adds to the traditional criteria of selection of suppliers and social–environmental information. In addition, there are qualifications and training courses focused on suppliers to include them in the company's Triple Bottom Line Management.

Also, it is possible to mention the supplier development programs that assess critical indicators of service level and social and environmental issues according to the concepts of Hitt et al. (2012) and Barney (1991).

3.6. Analyzing core capabilities and competencies

The key capabilities and competencies can be assessed under the four criteria by the VRIN Model:

Valuable: Does this competency entail an increase in revenues, a decrease in costs, or some combination of the two?

Rarity: Is the competency rare? A competency should be rare to the point that it is not defined as a perfect competition. Thus, there may be other companies that have the expertise, but still insufficient so that there is a shortage of this asset in the market.

Inimitability: Is the competency easily copied? The temporary competitive advantage of valuable and rare competencies can only be sustained if competitors face any drawbacks to imitate it. Competencies distinguished as Intangible Resources are generally more difficult to copy than those based on tangible resources.

Non-Replaceable: Can competitors easily offer substitute products/services? Equivalent competencies that allow similar strategies are not easily available.

Table 6 summarizes the analysis of sustainable organizational competencies of the company object of this study, performed qualitatively:

As it can be seen in Table 6, it is extremely difficult to find competencies that meet all the VRIN conditions in the model developed by Barney (1991) and that, according to Ruas (2005), are rarely observed in most companies. However, in Natura's case, when analyzing the corporate speech contained in the documents examined, it is clear that this company has at least three essential competencies related to their development in a sustainable way.

These three core competencies underlie all the company's actions and provide a competitive advantage which implies in above average returns, compared with the competition. Natura's core competencies are:

(a) Triple Bottom Line Management: as reported in the subsection "Analysis of the Mission, Vision and Values", it is evident in the analysis of Natura's strategic speech that the company's main core competency is its form of management based on the Triple Bottom Line concept.

Its core competency is the integration of all other competencies and capabilities directed to meeting the environmental, social and economic precepts. Aware that the performance in its business segment depends directly on natural resources, Natura seeks to

Table 5
Table of sustainable strategic resources indicators — social dimension.
Source: Based on Natura annual reports (2012, 2013, 2014).

Associated capability	Sustainable strategic resources — social dimension				
	Indicators	Unit of measure	2011	2012	2013
Manageability of labor practices and human rights	Education and training of employees	Millions R$	26 415	19 634	16 074
	Jobs (total generated)	Unit	758	804	1101
	Salaries and employee benefits	R$	*	*	*
	Labor relations (employees and unions)		*	*	*
	Diversity and opportunity	Percentage	*	*	*
	Equal pay	Proportion of lowest salary compared to minimum, per operation	1.6	1.4	1.5
	Dismissals and promotions	Percentage	n.i	n.i	n.i
	Employee turnover	Percentage	8%	9%	7.80%
	Absenteeism	Percentage	5.83	3.95	3.12
	Non-discrimination		*	*	*
	Freedom of association and collective negotiation		*	*	*
	Public engagement in relation to international labor agreements		*	*	*
	Forced and compulsory work		*	*	*
	Child labor		*	*	*
	Security practices	Investment R$ accident Prevention/employee	795	582	1009
	Disciplinary practices		n.i	n.i	n.i
Manageability policies related to the Company/Corporate citizenship and philanthropy	Community impacts		*	*	*
	Bribery and corruption		*	*	*
	Political contributions		*	*	*
	Competition and price practices		*	*	*
	Meetings with stakeholders		*	*	*
	External complaints related to products and processes		*	*	*
	Social action and investment in philanthropy		*	*	*
	Measuring the impact of philanthropic and social contributions of the company (direct impacts, social, satisfaction of the parties)		n.i	n.i	n.i
Capability related to product responsibility	Health and safety of the consumer or user		*	*	*
	Products and labels		*	*	*
	Advertising		*	*	*
	Customer complaints		*	*	*
Capability of talent retention	Performance assessments	Unit			6057[a]
	Bonuses	R$	*	*	*
	Employee satisfaction	Percentage	70[c]	72[c]	77[c]
	Benefits paid	R$	*	*	*
Capability of assessment and partnership with suppliers	Child labor in the production chain		n.i[b]	n.i[b]	n.i[b]
	Forced labor (slave) in the supply chain		n.i[b]	n.i[b]	n.i[b]

Notes:
(*) Not totaled.
[a] Number and percentage of employees who received performance analysis and career development.
[b] Assigned as goal.
[c] Obtained through climate research.

reach a stage of development in which it will be given the deserved monetary value to the services offered in support of ecosystems and biodiversity, and to society in general;

(b) Relationship Networking: the unique quality of the researched company is a relationship network, which constitutes an important element of its mission, in other words, to "promote the well-being", can be understood as part of the balance required in an open system. Without this core competency, it would not be possible for Natura to develop actions that promote sustainable entrepreneurship with extractive communities, or their relationship with their sales consultants, consumers, employees and other suppliers, for example;

(c) Products and concepts: its core competency in products and concepts is not just the innovation in the development of new products, but it covers its business strategy vision, management techniques and extraction of raw materials and development of technologies using renewable sources, industrial operations and logistics system.

When referring to the model of sustainable value advocated by Hart and Milstein (2003), it is considered that these three core competencies of Natura permeate the entire company and its main organizational decisions. Also, these assets distinguish the implementation of medium and long term strategic planning, emphasizing the reduction of environmental impacts through technological improvement made possible by their innovations.

These competencies allow Natura to reposition their products when improving indicators such as poverty and inequality (i.e. with the aim of improving the company's reputation and increasing the brand's legitimacy to consumers) and, thus, to produce more value for its shareholders, becoming a classic example of a company that knew how to implement the Sustainable Value model cited (Barney, 1991).

3.7. Synthesis of the organizational competencies framework in line with Natura's sustainable development

After discussing the capabilities linked to indicators of environmental, social and economic resources and to core competencies,

Table 6
Frame for applying the VRIN model on competencies.
Source: Research Authors, 2016.

Competency	Is competency valuable?	Is competency rare?	Is competency difficult to imitate?	Is competency irreplaceable?	Competitive consequences	Performance implications
Competency in the development and application of technologies that promote "carbon neutrality"	YES	YES	YES	NO	Temporary competitive advantage	Average returns and above average returns
Competency in the development of sewage treatment technology	YES	NO	NO	NO	Competitive parity	Average returns
Competency in the use of liquid effluents in industrial process	YES	NO	NO	NO	Competitive parity	Average returns
Competency in developing and applying life cycle assessment methodologies	YES	NO	NO	NO	Competitive parity	Average returns
Competency in developing efficient eco packaging	YES	YES	NO	YES	Temporary competitive advantage	Average returns and above average returns
Competency in the extraction of natural resources in a sustainable way	YES	YES	NO	NO	Temporary competitive advantage	Average returns and above average returns
Development of life cycle assessment methodologies	YES	NO	NO	NO	Competitive parity	Average returns
Innovation competency	YES	YES	NO	YES	Temporary competitive advantage	Average returns and above average returns
Competency in strong generation of cash	YES	NO	NO	YES	Competitive parity	Average returns
Competency in maintaining growth and profitability	YES	NO	NO	YES	Competitive parity	Average returns
Competency: Consistent payment of dividends	YES	NO	NO	YES	Competitive parity	Average returns
Competency in production and distribution	YES	NO	NO	NO	Competitive parity	Average returns
Competency in organizational culture	YES	NO	YES	YES	Temporary competitive advantage	Average returns and above average returns
Competency in marketing	YES	NO	NO	NO	Competitive parity	Average returns
Competency in logistics	YES	NO	NO	NO	Competitive parity	Average returns
Competency in value generation for the consultant	YES	NO	NO	YES	Temporary competitive advantage	Average returns and above average returns
Competency in relations with extractive communities	YES	NO	NO	YES	Temporary competitive advantage	Average returns and above average returns
Competency in retaining and attracting talent	YES	NO	NO	YES	Temporary competitive advantage	Average returns and above average returns

they were compiled in Table 7, enabling the completion of the implementation of the method for analysis of the interrelationship between Organizational Competencies and Sustainable Development, which was proposed in this study.

In short, the identification of core competencies, key capabilities and resources is vital to achieve the goals set by the strategic vision. Once identified, they enable organizations to support and develop the competencies that best generate sustainable value, acquire resources and create capability in areas relevant to the organization's sustainable development, which might be deficient (Barney, 1991; Hitt et al., 2012).

4. Conclusion

From the research objective, this work proposes a method for analysis of the interrelationships between sustainable development and organizational competencies by means of constructing the matrix shown in Fig. 2. The matrix manifests the organizational competencies, covering three basic categories of sustainability (i.e. environmental, social and economic). These include the various technologies, product classes and organizational services. They also include key capabilities based on functions and operational technologies.

This study proposes an original structure to determine the extent of these indicators of sustainable organizational competencies. It identified the methods and parameters needed to assess the interrelationship of organizational competencies and sustainable development through a wide bibliographic research, as well as through the analysis of a company's corporate documents.

By applying the method developed in this work in the analysis of the corporate speech contained in Natura's Sustainability Reports, as well as in its ISE (2013) questionnaires, it was possible to identify their core competencies and key-capabilities, and to list its sustainable strategic resources, both tangible and intangible.

Consequently, when synthesizing Natura's organizational competencies that are interrelated with sustainable development in Table 7, the company object of this piece of research's main sustainable organizational competencies were collected.

In this sense, through the application of this method, it was identified that Natura's core competencies are its unique relationship network, products and concepts, and especially its style of

Table 7
Interrelationship between organizational competencies and sustainable development.
Source: Research Authors, 2016.

Core competency	Key capabilities / competencies	Capabilities	Resources	Resources indicators
TRIPLE BOTTOM LINE MANAGEMENT RELATIONSHIP NETWORK PRODUCTS AND CONCEPTS	Competency in the development and application of technologies that promote "carbon neutrality"	Capability of optimizing Air resources	Tangible and Intangible Environmental Resources	Emissions of greenhouse gases (global warming)
				Emissions that reduce the ozone layer
				Emissions of other gases generating air pollution
				Quantity - Total water consumption
	Competency in the development of sewage treatment technology			Quantity - Net Consumption (total - recycled)
				Quantity - Water consumption in relation to the total available
	Competency in the use of liquid effluents in industrial process	Capability of optimizing water resources		Quantity - Recycled and reused water consumption
				Quality - Chemical discharges, oils and fuels
	Competency in developing and applying life cycle assessment methodologies	Capability of optimizing the Earth's resources - soil and energy		Quality - Biochemical oxygen demand in the water (BOD)
				Solid waste generated
	Competency in developing efficient eco packaging			Reused and recycled solid waste
				Occupied land
	Competency in the extraction of natural resources in a sustainable manner	Manageability and environmental policy		Direct and indirect power consumption (renewable or not)
				Energy consumption from renewable sources
				Consumption of recycled raw material and waste used (except water)
	Development of life cycle assessment methodologies			Strategy and policy of environmental management
				Structure for environmental management
	Innovation competency			Existence and external disclosure of environmental targets
	Competency in strong generation of cash	Capability of profitability	Tangible and Intangible Economic Resources	Sales
				Net profit
				Value added (EVA)
	Competency in maintaining growth and profitability	Capability of relationship with investors		Gross margin
				Costs of products, goods and services

(*continued on next page*)

management based on the Triple Bottom Line principles.

The core competency measurement criteria listed in the literature – especially the VRIN model developed by Barney (1991), as well as the conditions set by Prahalad and Hamel (1990) – make a competency that meets the four criteria, rarely found in companies. It is evident that Natura's effectiveness in implementing the Triple Bottom Line concept is its style of management, based on the strategic commitment to sustainability.

Thus, it is considered that the main contribution of this work was to structure a method that interrelates the organizational competencies to sustainable development. This process can be done in parameterized form, allowing the creation of a series of data gathering instruments related to the sustainable organizational competencies, since conceptual tools that reveal the elements of an organizational competency are important, as well as the interactions between them and the sustainable development strategies. More importantly, the method serves to what it is proposed, that is, it provides a structured approach to identifying the interrelationship of organizational competencies, so that the company can develop sustainably.

Table 7 (*continued*)

	Competency: Consistent Payment of dividends	Manageability of crisis and economic structure		R & D Expenses
				Dividends paid
				Crisis management plan
	Competency of production and distribution			Organizational structure for the company's reputation management
	Innovation competency	Capability to establish consumption and production patterns		Energy use (consumption, use of renewable energy, intensity of use)
				Consumption patterns - Transport
	Competency in organizational culture	Manageability of labor practices and human rights	Tangible and intangible social resources	Education and training of employees
				Jobs (total generated)
				Health and safety
				Salaries and employee benefits
				Labor relations (employees and unions)
				Diversity and opportunity
				Equal pay
				Dismissals and promotions
				Employees turnover
				Absenteeism
	Competency in Marketing			Freedom of association and collective negotiation
				Public engagement in relation to international labor agreements
	Competency in Logistics	Manageability of policies related to the Company/Corporate Citizenship and Philanthropy		Security practices
				Disciplinary practices
				Community impacts
				Political contributions
	Innovation Competency			Meetings with stakeholders
				External complaints related to products and processes
	Competency in Value Creation for the consultant	Capability related to product responsibility		Social actions and investment in philanthropy
				Health and safety of the consumer or user
	Competency in relations with extractive communities			Products and labels
				Customer complaints
		Capability of talent retention		Performance assessments
				Bonuses
				Employee satisfaction
	Competency in retaining and attracting talent			Benefits paid
				Child labor in the production chain
				Forced labor (slavery) in the production chain

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