

The pulp industry and value creation for stakeholders: an analysis from the main producers' countries

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Introduction

The pulp industry reflects a potential to lead to advanced sustainable practices (Sharma & Henriques, 2005). It can be considered crucial for the development of global sustainability, as it uses particular raw material basis for its production (Mirkkilä & Toppinen, 2008). According to those authors, “the raw material basis makes the sector both economically important and socially and politically sensitive in the global context” (Mirkkilä & Toppinen, 2008, p. 500).

The society has discussed about the firm's purpose and value creation, which can be to maximize shareholder value (Coase, 1937) or more broadly, to create value for a key group of Stakeholders in the firm (Freeman, 1984). One way to strengthen relationships with Stakeholders is through disclosure in relationships and information.

A communication tool in the path of a transparent image by companies is the GRI report (Fernandez-Feijoo, Romero & Ruiz, 2014). Considering data available in GRI reports, society can access social, economic and environmental information of the companies. And as Freeman postulated, Stakeholders are always affected or affect the firm's activities (Freeman, 1984).

With tremendous and accelerated growth, given its competitive advantage and innovation (Toivanen, 2013), the forest industry has the potential to progress to advanced sustainability practices (Sharma & Henriques, 2005). Using a Stakeholder perspective by transferring intangible social and environmental issues into tangible stakeholders interests (Sharma & Henriques, 2005). Despite the clear potential of this industry, the academy lacks on papers comparing pulp companies from different countries. Obtaining reliable and accurate measures are difficult, according to Sharma and Henriques (2013), so scholars confide on individual case studies. Hence, the relevance of the study here presented can be diagnosed.

Therefore, this study attempt to analyze differences and similarities from Brazilians, Americans and Canadians pulp companies, regarding value creation for Stakeholders. Also, it proposes a complement for Tantalo and Priem (2016) value drivers table, as it shows only generic values.

For that, it uses the materiality issues disclosed in the 2016 GRI reports from pulp companies on Brazil, USA and Canada. So, it should identify the legitimate Stakeholders declared by the GRI reports from the researched companies; as well as identify the perception of value creation for Stakeholders utilized by the researched companies.

Value Creation for Stakeholders

For this paper, we searched about the value creation literature, within the stakeholder theory. The following table (Table 1) provides us the theoretical background for this study:

Table 1- Definitions of value creation within the stakeholder theory

Authors	Year	Definition
R. Edward Freeman, Andrew C. Wicks and Bidhan Parmar	2004	Related to the questions: 'what is the purpose of the firm?' and 'what responsibility does management have to the <i>Stakeholders</i> ?' (p. 364) According to these authors, values are a necessary and explicit part of 'doing business'. (p. 364)
R. Edward Freeman	2010	Shows three interconnected ideas: (1) 'No stakeholder stands alone in the process of value creation.' (p. 8) (2) 'The primary responsibility of the executive is to create as much value as possible for <i>Stakeholders</i> ' (p. 9) (3) ' <i>Stakeholders</i> have names and faces and childrens'. (p. 9)
Jeffrey S. Harrison and Andrew C. Wicks	2013	These authors discuss about the economic perspective of value, the utilitarianism, referring Adam Smith, Jeremy Bentam and J. S. Mill. They also define value as a broad concept, saying that it can be 'anything that has the potential to be of worth to <i>Stakeholders</i> '. (p. 100)
Roberto Garcia-Castro and Ruth V. Aguilera	2015	Says that 'the total value created by a firm must also include the value captured by its <i>Stakeholders</i> '. (p. 137-138) So, they consider a broad definition of value creation, where value is not only the capital providers value, but the total value gathered to all the firms' <i>Stakeholders</i> .
Natalia Giugni Vidal, Shawn Berman and Harry Van Buren	2015	These authors talk about the narrow versus the broad view of value creation. As said in the text, 'narrow value creation models focus on a small set of <i>Stakeholders</i> ' (p. 913) and the broad view 'seek to creat value for a broad set of <i>Stakeholders</i> ' (p. 913). They also add that the managers should constantly remind that the objective of the firms is more than creating value for single stakeholder groups.
Caterina Tantalo and Richard L. Priem	2016	The authors consider value creation as essential for strategic success of a company. They view value creation as a sum of the valuation estimated by each stakeholder group, considering the multiple utilities they receive as a participant of the system. They set a table for the main things perceived as valuable for the stakeholders within a firm.

Source: Research data

After analyzing the literature, we decided to use Tântalo and Priem's (2016) paper to select the scope of our research, thus using their paper to identify the perception of the main stakeholders of a firm of what is valuable for them. Therefore, the Figure 1 below shows the value drivers considered by the essential stakeholders groups of a firm:

Figure 1- Examples of essential stakeholder groups' multiple value drivers

	Example value drivers (i.e., utility sources)					
Shareholders	Expected return (Fama and French, 1988)	Business risk (Amit and Wernerfelt, 1990)	Investment time horizon (Fama and French, 1988)	Corporate social responsibility (Aguilera <i>et al.</i> , 2007)		
Customers	Perceived value (Fornell <i>et al.</i> , 1996)	Product's price (Ackerman and Tellis, 2001)	Accessibility—time required to purchase the product (Priem, 2007)	Time required to master using the new product (Priem, 2007)	Perceived quality (Fornell <i>et al.</i> , 1996)	Environmental corporate responsibility and "ecofriendly" products (see Bansal and Roth, 2000; Shrivastava, 1995)
Employees	Salary (Abu-Bader, 2000) and benefits (Sutton, 1985)	Corporate social responsibility (Aguilera <i>et al.</i> , 2007)	Perceived fairness of the working environment (Aguilera <i>et al.</i> , 2007; Colquitt, 2001)	Job characteristics and skill variety (Glisson and Durick, 1988)	Work-life balance policies (Haley-Lock, 2008)	
Suppliers	Ordering procedure (Essig and Amann, 2009) and size	Long-term relationships (Kalwani and Narayandas, 1995)	Price received (Kalwani and Narayandas, 1995)	Client payment habits and payment terms (Wong, 2000)	Image (Essig and Amann, 2009) and reputation of the customer	Possibility for cross selling (Essig and Amann, 2009) and potential for follow-up business
Community	Number and types of jobs created (Porter and Kramer, 2011)	Taxes to be paid (Buetner, 2001)	Support infrastructure required (Porter and Kramer, 2011)	Externalities linked to the business (e.g., noise or air pollution) (Bansal and Roth, 2000; Porter and Kramer, 2011)	Local clusters (Porter and Kramer, 2011)	

Source: Extracted from Tantaló and Priem (2016)

The Pulp Sector

In Brazil, a relevant sector that contributes in tax collection is the pulp sector, being responsible for 16% of the collection in 2016, or \$ 1.424 billion in the trade balance. Brazilian pulp industry has expanded speedily over the last decades (Toivanen & Toivanen, 2011), and its production is mainly for the serving of the international market (Montebello & Bacha, 2011).

Despite of that, Toivanen and Toivanen (2011) considered Brazil as a late entrant in the pulp sector, comparing with other countries. Those authors attribute the rising of the sector when the railroads brought the eucalyptus in the country.

The Brazilian pulp industries act only with planted forests, using specially the eucalyptus specie (Montebello & Bacha, 2011), and, therefore, this specie occupies most of the research efforts in the country (Toivanen & Toivanen, 2011). Brazil figure as the second in the world pulp production ranking, with a production of 18.8 million tons in 2016 (Ibá, 2016).

As concerns the USA pulp industry, its development can be dated from the 19th century (Toivanen, 2013). Also, the American industry used mainly the species Northern Spruce and the Pinus Taeda, which differs from the type used in the Brazilian industry (Toivanen, 2013).

Also, United States' industry from pulp and paper can be considered as the first leader of production in the world (Brown, Cortes-Lobos & Cox, 2011). The importance of this industry within the country is evident. Statistic data from the RISI (2016) report shows the United States as the biggest pulp producer in the world. In 2011, the pulp sector's employees were over 04 million people around the world (FAO, 2011).

As it comes to the Canadian pulp industry, it can also be considered critical for the country economy and for its natural resources' sector (Hoffman et al, 2015). In 2016, Canada produced 17 million tons (Ibá, 2016). Five pulp and paper companies can be found on Forbes' list of best

employers in Canada in 2018 (Forbes, 2018).

The United States has developed its pioneering role in the modern pulp and paper industry through three phenomena: constant technological innovation in production with new pulp raw materials; innovation in vertically integrated organization of pulp and paper mills and companies; and the adoption of a organizational structure in large-scale enterprises such as pulp, with bureaucracy control and optimization, in all sectors (Toivanen, 2013).

While the North American pulp industry began its tremendous development grounded in the pillars of innovation in the mid-nineteenth century, its innovation-driven history is a critical strategic resource for long-term national competitiveness (Toivanen, 2013). The Brazilian paper and pulp had strong inspirations for its development and progress, strengthened since 1950, being among the five priority areas of the Brazilian government's Plan of Targets for investments aimed at economic development (Silva; Bueno & Neves, 2015).

The progress of Brazil as a world reference in the pulp sector was due to high investments in forestry through plantations of Pinus and Eucalyptus, raising the average productivity between eucalypt plantations between 2004 and 2014 from 15 to 43 m³ / ha per year and from pinus from 15 to 32m³ / ha per year (Silva et al, 2015). Currently, Brazil has forests with high productivity and high-capacity export-oriented factories, the main consumer being the Asian market (Silva et al, 2015).

The main consumption of pulp comes from the paper industry, which increased world production from 50 million tons in 1950 to its robust 398 million tons in 2013 (Silva et al, 2015). Having, then, a profound impact on production and demand for pulp.

These data corroborate to the significant range of Stakeholders impacted by the pulp industry worldwide. This group has from suppliers of wood and other supplies, to employees, communities around forests and industries, consumers, shareholders and others. The table 2 below shows a comparison between the three countries related to pulp production and consumption:

Table 2: Comparison between USA, Brazil and Canada related to pulp production and consumption

	USA	BRAZIL	CANADA
Pulp production	In 2016, 48,5 millions of tons produced (IBA, 2017).	In 2016, 18,8 millions of tons produced (IBA, 2017).	In 2016, 17 millions of tons produced (IBA, 2017).
Forest type	Native forest (Spruce and Pine) and plantation (Toivanen, 2013; TFT, 2015b).	Most of forests are short-fiber plantations (<i>Eucalyptus</i> spp)- non native forests (TFT, 2015a)	Native forest (TFT, 2016)
Pulp destination	Domestic consumption and Asia (TFT, 2015b)	USA, Europe and China (IBA, 2017).	USA, Europe and Asia (TFT, 2016)
Highest rates of Pulp consumption per sector	Domestic consumption for tissue paper and containerboard paper (RISI,2016).	Exports: USA (tissue paper and containerboard paper); China and Europe (printing & writing and containerboard paper) (RISI, 2016).	Exports : China and other parts of the world, including Europe - printing & writing and containerboard paper (RISI,2016).

Source: Research data

Materiality Issues and Sustainability Reports

Sustainability investments are increasing nowadays, especially when investors merge sustainability data with their decisions about capital allocation (Khan, Serafeim & Yoon, 2016). For those authors, sustainability become more and more used strategically in firms, thus highlighting the importance of disclosure of data regarding environmental, social and governance.

Khan, Serafeim, and Yoon in their text from 2016 stated that in early 1990s only about 30 organizations issued sustainability reports, whereas in 2014 about 7,000 organizations did it. In this context, one can insure the increase of importance of sustainability reports. Also, considering this context, it is critical to discuss the materiality topic, concerning sustainability reports.

Reporting what is considered material is not a new question for organizations (Zaderk & Merme, 2003). This concept has come from the accountancy background (Lo, 2010), although it is nowadays being very much used for sustainability data disclosures. Hence, Hsu, Lee, and Chao (2013) states in their work that the analysis of materiality can be considered an essential element of sustainability reporting. Sustainability reports face a big challenge on how to identify and prioritize material issues, according with the stakeholders needs (Hsu et al, 2013). According to those authors, without a proper analysis on the materiality issues of this kind of reports, communication with the stakeholders cannot be accomplished.

Although sustainability reports are not specifically addressed for investors (for this purpose, see the financial report), it is important in a way that investors should also care about non-financial data. Those reports should be used as a sum for their decisions, and not conflicting, that being, use “sustainability as well as (not instead of) financial performance” (Zaderk & Merme, 2003, p. 8).

According to the Accountability Report (2006, p. 32), material issues are “those things that could make a major difference to an organization’s performance”. In addition, the text affirms that material information is the basis for managers and other stakeholders to state what matters to them, as well as “take actions that influence the organization’s performance” (Zaderk & Merme, 2003, p. 32).

Whereas this study focus on GRI reports, it is important to understand the materiality within the GRI, but also the importance of the GRI itself. According to Hourneaux, Galleli, and Gallardo-Vázquez (2017) the GRI guidelines can be considered as the most used reference regarding reports in sustainability. Its intention is to present reports regarding economic, environmental and social impacts of an organization (Hourneaux et al, 2017).

The 2015 Guidelines for Sustainability Reports text describes that this report should approach aspects regarding materiality principles. Materiality can be considered as the threshold from which data is expressive enough to be related. Therefore, it should not be limited to financial aspects. It should address eloquent social, environmental, and economic impacts that could influence stakeholders’ assessment (GRI, 2015).

Materiality issues can appear, in the GRI reports, either by text or by a tool called materiality matrix. The matrix can be understood as a tool featuring what is important for the company (at one axis) - regarding economic, environmental, and social impacts - and what is important for stakeholders (on the other axis) (Murningham, 2013). The called GRI G4 Sustainability Reporting Guidelines focus on the materiality as central element, providing the reflection of what is relevant for the company and its Stakeholders and what promotes value.

Methodological aspects

The present study has a qualitative approach (Gil, 2002) and, for that, the technique of content analysis was used, according to the perspective of Bardin (2009). The data is collected through secondary sources, more specifically the GRI reports.

We collected data from sustainability reports- GRI- of six Brazilian, two American and five Canadian pulp and paper companies, from the year of 2016. In those thirteen reports, we examined the materiality matrix, as well as all materiality issues, as we understand it has the most connection with value creation for Stakeholders groups considered by the firms. The companies studied can be viewed in the table 3 bellow:

Table 3- Brazilian, American and Canadian pulp and paper companies studied

American Companies	Brazilian Companies	Canadian Companies
Clearwater	Cenibra	Canfor
Westrock	Fibria	Catalyst
	Irani	Domtar
	Klabin	Resolute
	Suzano	Tembec
	Veracel	

Source: Research data

The analysis of the reports is done through qualitative research. According to materiality and value creation literature presented before, the analysis was done by categorical analysis. Therefore, through analyzing the data presented in the GRI reports, more specifically concerning the material part of it, the value drivers perceived by each group of stakeholder are categorized on each report, from each company under study.

Also, the findings were compared with Tantalo and Priem (2016) value driver table (can be seen in figure 1). As this table only presents generic value drivers, a complement for this table was proposed. Therefore, as we are studying one specific industry- the pulp industry- it was important to create two specific lines- one addressing the stakeholder group we named ‘Government and Regulatory Agencies’, and the other addressing the group of ‘Multiple stakeholders’. The first to embrace issues linked to regulations and govern; and the second to embrace issues that belonged to many groups of stakeholders, and not only to a specific one.

Also, the creation of a new column, regarding each stakeholder group presented by Tantalo and Priem (2016) was necessary. As some of the value drivers found on the 13 reports under study did not match any category presented in the cells brought by the table of Tantalo and Priem(2016), the creation of new column was fundamental. This supplementary column was named ‘Value drivers additional to Tantalo and Priem (2016)’.

Companies’ backgrounds

To the understanding of this research, it is necessary to present the background of the American, Brazilian and Canadian companies to be studied. It is important to clarify that the sample here selected depended on the presence or not of the GRI report on the year of 2016 on that specific company. Therefore, three Tables (4, 5 and 6) are presented. They show important data concerning the local, gains and products from the selected companies. The American companies’ backgrounds can be viewed in Table 4 below:

Table 4 - American companies’ backgrounds

Company	Local	Annual pulp production	Products
Clearwater	USA	875,000 tons	Pulp, paperboards, tissues and fibers
Westrock	USA	-	Pulp, paperboards and fibers

Source: GRI and Annual Reports

The Brazilian companies’ backgrounds can be viewed in Table 5 below:

Table 5 - Brazilian companies' backgrounds

Company	Local	Annual pulp production	Products
Cenibra	Brazil	1.2 million tons	Chemical pulp, bleached
Fibria	Brazil	5.02 million tons	Chemical pulp, bleached
Irani	Brazil	-	Chemical pulp, unbleached and other paper products
*Klabin	Brazil	1.5 million tons	Hardwood pulp, softwood pulp, fluffpulp from softwood, sacks and other paper products
Suzano	Brazil	3.53 million tons	Chemical pulp, bleached and paper
Veracel	Brazil	1.1 million tons	Chemical pulp, bleached

Source: GRI and Annual Reports

*Klabin is the only company in Brazil to supply the market with hardwood pulp, softwood pulp and fluffpulp from softwood.

The Canadian companies' backgrounds can be viewed in Table 6 below:

Table 6 - Canadian companies' backgrounds

Company	Local	Annual pulp production	Products
Camfor	Canada	-	Bleached Softwood Pulp, Unbleached Softwood Pulp, Fibre United Paper, Solid Wood, energy
Catalyst	Canada	2.3 million tons	Printing papers and market pulp
Domtar	Canada	1.8 million tons	Pulp and specialty papers
Resolute	Canada	1.7 million tons	Market pulp, tissue, wood products, newsprint and specialty papers
Tembec	Canada	-	Lumber, pulp, paper and specialty cellulose

Source: GRI and Annual Reports

Findings on Materiality

The materiality issues were extracted from the publicly disclosed GRI reports from each firm under study. Therefore, they were compiled and categorized according to the classification of primary stakeholders, utilizing Tantalo and Priem (2016) table of 'examples of essential stakeholder groups' multiple value drivers', showed on a previous session.

Each GRI collected was analyzed, looking for their materiality aspects, and then a specific table was drawn, containing the materiality aspects according to each stakeholder classification. Those tables can be seen on the next session.

The Companies

The Table 7, 8 and 9 below shows the materiality aspects contained in American, Brazilian and Canadian companies' GRI reports from 2016, respectively:

Table 7- Example of value drivers existent in USA companies considering Tantalo and Priem (2016) table

Shareholders	Expected return (financial performance)				
Customers				Environmental corporate responsibility and ecofriendly products (product/packaging recyclability) (product labeling and safety regulatory compliance)	
Employees		Perceived fairness of the working environment (diversity and inclusion)		Work-life balance policies (occupational health and safety) (labor compliance) (employee training and retention)	
Suppliers					
Community			Externalities linked to the business (energy, water, air, waste emissions reuse and recycling/ greenhouse gas emissions environmental protection)		
Government and Regulatory agencies	Environmental regulatory compliance	Sustainability expenditures			
Multiple stakeholders	Ethics and code of conduct	Innovation	Human rights compliance	Fiber certification	

Source: Research data

Table 8- Example of value drivers existent in Brazil companies considering Tantalo and Priem (2016) table						Value drivers additional to Tantalo and Priem (2016)
Shareholders	Expected return (financial result and performance) (economic performance) (economic results)					Business expansion
Customers				Perceived quality (product quality)	Customer satisfaction Brand management and communication	
Employees			Perceived fairness of the working environment (diversity and inclusion)	Work-life balance policies (occupational health and safety) (valuing the workforce) (generation of job and incomes)	Human capital management	
Suppliers					Supplier qualification and development Supply chain management Social-environmental risk assessment of suppliers Wood supply Transport and logistics management	
Community	Number and type of jobs created (generation of job and incomes)		Support infrastructure required (investment in infrastructure and local services)	Externalities linked to the business (emissions management) (energy, water, air, waste emissions reuse and recycling/ greenhouse gas emissions)	Local clusters (engagement with local communities) (support of <i>quilombolas</i> and indigenous) (local development and social support) (quality of education)	Biodiversity protection and conservation Inputs and the recycling of material Impact of operations on communities directly affected
Government and Regulatory agencies	Sustainable Forest management	Participation in and development of public policies	Transparency and leadership in institutional issues	Compliance with environmental regulations	Land use rights	
Multiple stakeholders	Sustainability governance	Innovation	Research and development	Certifications		

Source: Research data

Table 9-Example of value drivers existent in Canada companies considering Tantalo and Priem (2016) table

Value drivers additional to Tantalo and Priem (2016)

Shareholders	Expected return (economic performance) (return on investment)	Business risk (economic stability) (corporate economic viability) (economic opportunities)				
Customers		Product's price (competitive prices)				Stable supply of quality products
						Market development, expanding use of wood Procurement practices Compliance with regulations concerning product stewardship
Employees	Salary (competitive wages)		Perceived fairness of the working environment (diversity and inclusion)		Work-life balance policies (occupational health and safety) (labor compliance) (employee training and retention) (training and education) (safe working conditions)	
Suppliers				Image and reputation (responsible operations) (sustainable manufacturing) (fiber procurement) (fiber sourcing practices) (responsible procurement)		
Community			Externalities linked to the business (energy, water, air, waste emissions reuse and recycling/ greenhouse gas emissions environmental protection) (environmental incidents)	Local clusters (engagement with local communities) (engagement with first nations-aboriginal) (economic partnership with first nations)		
Government and Regulatory agencies						
	Sustainable forest management	Involvement in public policies				
Multiple stakeholders			Product development	Transparency and communication	Forest certification	
	Compliance	Research and development				

Source: Research data

Discussion and Conclusion

The data analyzed showed some aspects that were common to all countries. For instance, 'expected return' (concerning shareholders); 'perceived fairness of the working environment' and 'work-life balance policies' (considering employees); and 'externalities linked to the business' (considering community) - were common to all three countries. This shows the preoccupation of all the countries with the return of the money invested, but mostly, big concerns on how the companies treat their employees and the environment.

All countries were concerned with diversity and inclusion, what implies the changes occurring nowadays considering the workforce (for instance, as the presence of women, different ages, races, nationalities, sexual orientation). Also, the preoccupation present in all tables concerning policies in the work-life environment, shows a crescent preoccupation with the working conditions of the employees, health and safety, training and education and so on. This shows also an increase of concern with the security of their employees, as the law became stricter during the years in such countries.

All three countries also showed big concern with the externalities linked to their business. As we are dealing with forestry industry, the preoccupation with the conservation of the nature, pollution and emissions is very relevant.

Canada and Brazil also showed preoccupation with local clusters. This occurs as both countries present preoccupation with indigenous, *quilombolas*, first nations and aboriginal people, that live around their facilities and forests.

Also, when comparing to Tantalo and Priem's (2016) value drives, the differences are mainly due to the type of report and the industry's peculiarities. Therefore, not all value drivers from Tantalo and Priem (2016) table were covered in the analyzed GRI reports.

As that table is a generic one, and non specific for any industry, some differences were expected. The Tantalo and Priem's (2016) reference provides us a direction to identify the value drivers on the GRI reports and their materiality. Although, this reference do not considers an important stakeholder group, what we called the 'government and regulatory agency (presented in light grey)'.

This group has importance to the value creation on the relationship management, and, in one hand the government plays a redistributive role (Jones, Wicks & Freeman, 2017), in other hand, the regulatory agency creates rules that must to be followed by the pulp companies. Thus, considering the analysis focused in the pulp sector specificities and the content above, the authors have identified this group as important to this research and suggest a new stakeholder group to the Tantalo and Priem's basic table.

Also, some value drivers founded in the GRI reports could not fit into the basic Tantalo and Priem (2016) table. Therefore, it was also necessary to create a line that represented the 'multiple stakeholders' (presented in light grey). As many material issues reported by the companies could not fit into any basic category, this new line creation was crucial. Therefore, this creation was necessary for all the three countries.

Some material issues fit the five groups categorization (shareholders, customers, employees, suppliers and community), but did not fit in any of the box (or cells) defined by Tantalo and Priem (2016) table. In other words, it fits in the lines, but did not match the columns. Therefore, it was necessary to create a part of the table that encompassed additional value drivers than the ones presented by the basic table. This happened only with Brazilian and Canadian companies. This column was called 'Value drivers additional to Tantalo and Priem (2016)' (presented in orange).

Thus, a restriction of this paper embodied some economic information. Specifically concerning shareholders, the information is much more provided on financial reports instead of sustainability reports. As this research focused on the sustainability reports, this result was expected.

Despite of that, many of the 13 GRI reports managed to encompass some economic/financial criteria. Mostly, the companies considered important to deal with economic management and financial results. But only the Canadian companies related the business risks to be a material topic.

Hereinafter, we present the specificities related to each stakeholder group. The shareholders, as said above, usually have their interest explicit on financial reports instead of GRI and materiality. However, this stakeholder group is considered with the expected return. Brazilian companies also consider the business expansion, due to the fact that the pulp sector is more recent than others in this research.

Brazil's development for a forestry-oriented industry silviculture took place in the early 1950s, through the Government's Plan of Targets (Plano de Metas), electing the pulp and paper industry among the sectors contemplated and the Policy of fiscal incentives, in 1966 (Silva, Bueno & Neves, 2015). USA, for example, had adopted virgin fiber as input for pulp industries in 19th Century (Toivanen, 2013).

Concerning the customers, not all companies considered their stakes to be extremely material. It can be maybe explained by the fact that pulp products are commodities and, therefore, the prices keep at a specific level. USA enterprises define as material ecofriendly products, once USA consumers understand that saving the environment is a high priority and also, products 'perceived quality (Vlosky; Ozanne & Fontenot, 1999), such as the Brazilian companies considered as material for their customers.

When it comes to employees, all the analyzed companies considered its topics to be material. Mostly, they considered aspects as the wages, the workforce environment, diversity and health and safety at work. Thus, one can infer that employees' stakes are considered very important to the companies in all the three countries.

The suppliers' stakes, however, were not present in Brazilians and Americans companies' value drivers tables, when considering the comparison of value drivers from Tantalo and Priem (2016) table. Despite of that, Brazil did presented many material topics considering suppliers, once mostly are small and medium plantation forest suppliers included in specific programs of these companies considering that they have a large demand on them as pulp inputs. USA did not presented any material topic when concerning suppliers.

The Canadian companies, however, seem to pay more attention to the supplies aspects. It can be due to the fact that the Canadian pulp industry (TFT, 2016), unlike the others, use wood from natural forests, therefore it deals with a very different supplier than the USA and Brazil (as they both use planted forest) (TFT, 2015a; TFT, 2015b).

Though, most of the material aspects found in the analyzed reports were related to the community stakeholders. It seems to be due to the fact that pulp industry is closely linked to natural/environmental aspects and also have a considerable impact on field and their surroundings. Once this research used the sustainability reports to its analysis, this result was expected though.

All three countries presented information and considered communities surrounding their facilities, with the forest sustainable usage, the biodiversity, water, air and soil quality, pollution, emissions, effluents and so on. Those, considered in Tantalo and Priem (2016) as externalities, are very important to the sector, as it deals directly with forestry products, it impacts the natural environment directly.

Most of the companies use international certifications as standards to provide public information to the society, which include have a public mechanism of dialogue with communities and a feasible timeline to response. So, this impact the creation of the stakeholder group 'Government and regulatory agencies' in our tables.

Some aspects present in every country table are related to certifications, environmental compliance and the sustainable forest management. Despite the fact that all companies related as material the certifications, the studies from TFT (2015a, 2015b, 2016) showed a different reality.

In Canada, almost 94% of the forests are owned by the Crown, and only 6% are private (TFT, 2016). This impact a lot in Canada's table (table 9), especially considering the preoccupation with the First Nations and land use rights.

Also, Canada is the only country that demonstrated preoccupation with the image of their suppliers. Once Canada has more public forests, it has a high rate of forest certification (46%) (TFT, 2016). Also, according to that publication, Canada is considered the most certified country in the world, when concerning forestry certification.

Canada pulp industries consumes mostly natural forests, which is located in many areas with aboriginal communities surroundings (TFT, 2016). So, firms are required to take responsibility for the environmental and social impacts of its operations and the risk of impacts on indigenous and aboriginal people's lives (Sharma and Henriques, 2004), specially when around 70% of the aboriginal community are known to live in forested areas (TFT, 2016).

In Brazil, south of Bahia has traditional communities such as *quilombolas* and indigenous people, were 3 pulp industries are located, demanding specific actions and stakeholder relationship. The forests in Brazil are owned mainly (around 76%) by the government (TFT, 2015a), which have impact directly to the fact that land use rights was very much cited in the Brazilian context.

In the USA, on the other hand, forest lands are mainly particular, owned by small families. It impacts on many sides. The USA companies do not provide much specific information about the communities, as can be seen in table 7.

Once the forest certification appears as a value driver for all the analyzed countries, and local clusters appears for Brazil and Canada, the authors decided to deep analyze the possible value added by these forest certification schemes. Schemes of voluntary forest certification, such as FSC, include obligations to the companies to build solid relationship with local clusters (First Nations, indigenous people, *quilombolas* etc.) with metrics and problem solving within a manageable time period (Teitelbaun & Wyatt, 2013).

Despite all the efforts of finding their similarities and differences, some questions are left behind, such as the activities and actions defined by companies in their countries to the materiality identified and the stakeholder's groups mapped. Also, by analyzing the GRI reports, is not always possible to check the value creation proposal for these stakeholders, or even if this proposal exists, once the information is superficial and provided by topics.

Most of the value drivers generated by companies are solutions created to meet economic benefit, such as image and reputation, financial return etc. However, other value drivers are created by a contemporary society and new scientific studies grow to face the societal needs. Among others, the connection between social and economic progress, by reconceiving products, by developing new market which value creation is already perceived or not by the stakeholder. (Porter & Kramer, 2011). Thus, the value creation for stakeholders will face the modern life challenges and will continually be redefined and improved, being this a dynamic matter inside the university.

So, considering the GRI Reports are the most reliable public information to find out how companies in their countries are dealing with stakeholders demand, and what are material, are these reports providing the transparency needed as a public report? Are they a reliable report to analyze the value creation for stakeholders? Those questions represent some limitations of this study.

All those findings above are very important to the understanding of the pulp industry in each studied country and for the comparison between the countries, viewing differences and similarities. Therefore, we can suggest that future publications address also financial reports, and not only sustainable ones. The usage of both can be very interesting to present a much complete study.

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