

# Firm Behavior, an Engineering Business Tool for a Better Brand Value in all Sectors

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#### Abstract:

In the last decade after the financial crisis, firms have been changing their behavior. Companies nowadays seek a better brand with the new perception of businesses. A major source of the companies´ value is composed of their brand that reflect their practices and their business model. The methodology is performed by collecting information from publicly listed companies in the United States from all the sectors for 8 years after the financial crisis, tocompare and analyzethe firm practices among each sector and its impact on the brand value. The following paper contributes by highlightingthe importance to developing a new engineering tool for a behavior changereflected by better brand value with sectoral analysis. This research helps managers to implement models affecting positively their firm behavior and their brand value. We can realize that among the majority of business sectors in the US, the more companies head towards corporate socially responsible practices the higher brand value they would have and thus implies a tool is needed to improve.

**Keywords:** Corporate Social responsibility, brand value, governance, engineering tools, financial crisis, US sectors

# I. INTRODUCTION

Investing in brand value was pointed out as a tactic to Competitiveness (Vilanova& 2008). Sustainability and competitiveness are positively correlated (Lee et al. 2003). However, competitive advantage to enhance a business performance has shifted from the classic approach to a more sustainable green way. Building a competitive strategy with a sustainable approach (Buono& Kerber, 2010) is meant to enhance a business performance, among which this approach should have sustainable business drivers (Bharadwaj, et al., 1993) to build a green brand value which in turns build a strategic position in the market for corporations (Amini, et al., 2012). The recognition of this fact is not enough but a long-term position requires a lot of attention as suggested by current conceptual models for building and sustaining brand value(Perez-Batres, et al., 2010). Proper management of brand value through a change

management strategy is needed to achieve competitiveness whose determinates are to be fully explored in this paper.

Business and sectors vary a lot and the drivers are different among the sector but sustainability factors have an effect on each sector to the degree that it has been classified as a new and growing financial risk factor pointing out the effect of its mismanagement that might have a drawback overall business causing a negative reputation and thus a worse brand value (Ogrizek, 2002). Sustainable investing is the art of long-term performance (Krosinsky& Robins, 2008) and has an impact on investors' financial returns as far as social and environmental challenges are taken into account (Bugg-Levine & Emerson, 2011). We can recognize that there is an importance of a full empirical study over the effect of governance drivers on brand value. There is a significant impact of Corporate Social Responsibility efforts on customer-based brand value perspective(Staudt, et al., 2014), as well as a conceptual model in the business-to-



business market to highlight the importance of the topic from a stakeholder perspective(Sheth& Sinha, 2015). However, there is not yet full attention to the deep research on the role of those firm behavior drivers on brand value due to the inconsistent theoretical ground reviewed(Malik, 2014).

#### II. LITERATURE REVIEW

# 2.1 Business Models and Intangible Assets

Innovation seems to be the key word in today's business and is considered a major element of the concept of intangible assets because it represents the intellectual capital of a firm as well as its potential growth (Corrado et al., 2013). Innovation plays the role of engineering management tools on our daily activities (Vinc et al, 2003). From the other side, innovationhas been found to enhance firm value and in particular before the 2008 financial crisis, corporate socially responsible innovative firms have been found to benefit a significantly higher value after adopting those tools. (Mishra, 2017)

A good brand managementpreserves brand value (M'zungu et al., 2010). Even if this topic is catching significantly the attention of several experts, there is still an ongoing debate referring to its features starting from its definition. Intangible assets stem from goodwill data, but the debate on the definition goes back in time(McInnis &Monsen, 2018). For example, intangible assets as those assets that include brand value and there exists the brand intangible asset (Costa et al., 2008). Considering two firmsthat belong to the industry with different business behavior modelsand other factors being the same, there exists an extra benefit to the final users that make this intangible asset to be evaluated differently.

Intangible asset is part of the new approach for business models in the new economies (Walter, 2004). Firms affect the value of their brand by the internal practices such as labor service (King et al., 2008) as well as by their external practices such as customer service (Brodie et al., 2009). Therefore, many factors affect the process, and, in this study, we would like to see the effect of environmental, social and governance driverson the brand value among each of the 10 business sectors.

#### 2.2 Environment, Social and Governance effect

Corporate government codes are part of the company resources and part of management of firms (Wieland, 2009). For instance, a company's practice to the climate

change could have an impact on a corporate brand value (First &Khetriwal, 2010)advising business leaders the importance of investing in environmental activities that does have an effect on the core business model (Konar& Cohen, 2001). Internal auditing is considered an effective tool for corporate governance (Karagiorgos et al, 2010) driving companies to seek new engineering tools with new action plans to accomplish a favorable position(Dyer & Singh, 1998), and focusing on social entrepreneurship connecting business to societies (Porter & Kramer, 2006) whose awareness help their business grow on the long run (Kerr & Rev, 2007). Corporate socially responsible is part of the corporate governance tool that shapes a business practice (Harmon et al., 2009) and thus driving businesses to adopt it as a core tool (Germanova, 2008). Thus, business leaders are advised to adopt such procedures in place being aware of the importance of creating a better brand value with a competitive strategy (Balmer & Gray, 1999) using those governance resources in practice that are classified as businesses core identification (Kaplan & Norton, 2008) as well as a strategy for differentiation(Sengupta, 2005).

Being a global environmental political issue, there is a need to a shift towards the emergence and implications of transnational climate-change in companies. A study on global affairs has been initiated (Andonova et al., 2009) and a set of core corporate social responsibility theories have been set after the economic impact of the financial crisis in the US (Kemper et al., 2010), but there is still a need to factor implementation and responsibilities from companies to adopt this governance behavior in their core business. Since brand value is a driver for businesses to adopt new tools, the transnational business governance acts a framework and raise awareness for a change (Eberlein et al. 2014). Despite the fact that there has been a study on firm practices inparticular sectors between the US and UK (Aguilera et al, 2006), the need of the sectoralstudy is driven from the new shift in the American markets among all the sectors putting the United States dream at risk shift with the economic downfall (Hacker, 2019).

There has been a lot of research on building a brand value from a descriptive approach and the quantitative approach is yet to be explored. Brand Value among the US market sectors has been explored from scanner data related to the product caliber (Kamakura& Russell, 1993), from geographic production quality (Johansson&Nebenzahl, 1986), from cultural and consumption value (Park et al., 2009), from a stockholder's value (De Mortanges, 2003), and from societal marketing (Hoeffler et al., 2002) where the



majority of those studies rely their approach on the conductof the market participants of the brand and their related perception constituting a major limitation in interpreting exactly what the brand principle is and explain the importance on identifying each brand's value drivers(Fernandez, 2017). Thus, this paper will checkthe impact of environmental, social and governance driverson the brand value among each of the 10 business sectors.

#### III. METHODOLOGY

# 3.1. Model

The aim of this paper is not to correct Damodaran's model(Damodaran, 2006)who examined this intangible asset as an incremental cash flow of branded to unbranded companies. We adopt his model to check on the impact of the governance and socially responsible factors on the brand value being the dependent variable.

The brand value has been assessed as follows:

Value of the brand =  $(E/S)_{Brand name}$  Sales  $_{Brand}$  -  $(E/S)_{generic}$  Sales  $_{Generic}$ 

where E: Equity calculated by Market Cap

S: Sales Volume

### 3.2. Variables and Data

The dependent variable *Brand Value* is composed of the Market Capitalization to Sales(Fernandez, 2017).

The authors of this paper calculate the generic item by the average of the first level of the industry (Bloomberg, 2018) with the intention of reducing this hidden arbitrariness.

Investing in Brand value was pointed out as a tactic to increase Competitiveness (Pitta &Katsanis, 1995). For this reason, *Competitiveness* independent variable was introduced in the panel data to approximate the market share of each company in its sector calculated by the average net profit margin (compared with others in the same industry) to control for market participants' decisions associating brands with net profit margin. (Smith et al., 2007).

The variable Company Intangibility to estimate the net intangibility of the firms has been calculated by

subtracting *Good Will* from *Net Total Intangible Assets* then divided by *Total Assets* that represents the book value. This is because *Good Will*which isdeemed to be taken into account on the new accounting ledger of the company after the sale of business is wiped out.(Lynch, 2014).

Whilst some companies haven't been providing information at all (CSR reporting, along environment and workers' practice), procedures have been improving and transforming to provide better reports (Tschopp et al., 2014). A lot of firms are considering new CSR reporting methods as there is necessity for establishing its credibility (Crifo& Forget, 2013)pointing out the reason for implementation (Christofi, et al., 2012)compared to the current existing reports(Fowler & Hope, 2007). The authors of this paper relied on third party CSR data extracted from the Bloomberg Data Service (Bloomberg, 2018). The variable ESG measures the Environmental, Social and Governance Analysis estimated with one value; followed by the ISS Quality Score (Institutional Shareholder Services) the world's leading provider of corporate governance and responsible investment solutions and the collective voice of the shareholders of board policies and decision making regarding sustainable investments (Hubert et al., 2017). The model includes another variable, Sustainalytics rank, a good measurement indicator in each industry that covers at least 70 indicators in each industry, provided by a global investment firm that specializes in sustainability research and analysis, and checks if company reporting meets international best practice standards. Sustainalytics variable has been added to reveal how transparent companies are in reporting their ESG scores (Hubert et al., 2017). Lastly two governance variables on how much women have influence on board and employed(Bloomberg, 2018).

Despite the lack of so much data from companies not wanting to produce sustainability reports in some sectors (Stubbs, et al., 2013), 8 years of data was extracted, a panel data was constructed due to the usage of several variables. Categorical variables were introduced among 10 sectors with their first grade of detail (Bloomberg, 2018). An OLS panel data regression with fixed effects to control for the yearwas performed introducing the Company Intangibility and competitiveness per sector control variables. BICS1, the sector allocation used here,



contains 10 unique macro sectors, which are then disaggregated in further BICS (Bloomberg industry classification sector) classifications, up to a total of 2294 sectors. Problems that might be faced are Multicollinearity among some variables, followed by homoscedasticity which were be tested as well.

Eight years of data (2010 - 2018) have been collected from published annual report of US publicly traded companies to check on the governance factors in the American Market. Overall, 1,835 observations have been collected despite the lack of so much data. The sectors included in this study are listed below:

Financial, Materials, Industrial, Energy, Health, Communications, Basic consumption, Public service, Discretionary consumption, and Technology(Bloomberg, 2018).

#### IV. EMPIRICAL RESULTS

The main intention of this study is to check the relationship between company behavioral factors and brand value checked among all sectors in United States after the financial crisis of 2008. The results show that among the majority of the sectors, the implication of environment, social and governance of underlying company, the higher is the brand value. This study also checks on the effect of Competitiveness on brand value of the underlying company for all sectors in US market. Results (see table 3) from the Panel data regression and paired-sample t-test methods show with a very high significance P – Value that the higher the competitiveness of a certain firm among all the sectors, the higher is the brand value regardless of the intangibility of a company. This is justified by the company behavior that would increase their competitiveness. Thus, business leaders are advised to adopt such procedures in place being aware of the importance of creating a better brand value with a competitive strategy (Balmer & Gray, 1999) using those governance resources in practice that are classified as businesses core identification(Kaplan & Norton, 2008). To take a deeper look at drivers affecting their behavior, the ISS Governance QuickScore a rate that provides each company with a risk score, from 1 to 10, in each of four governance-related categories: Board Structure: Compensation/Remuneration; Shareholder Rights & Takeover Defenses; and Audit & Risk Oversight (Hubert et al., 2017), as well as an overall governance risk scoreThe scoring is such that "1" refers to a higher quality and lower governance risk, and "10" means lower

quality and higher governance risk that were publicly introduced in Bloomberg(Sullivan & Cromwell, 2016).

To test multicollinearity, we relied on the variance inflation factorVIF. The results show that the variance of the estimated coefficient of all variables are moderately inflated (below 10). The VIF of all the other variables is low which indicated the low correlation among the independent variables, thus multicollinearity does not cause a problem for our explicative model used.

This tests statistically allows to use the model as predictive and explicative which is the main intention of the usage of this model in the sectoral analysis.

**Table 1.** VIF tests

VIF
1.009
1.075
1.096
1.345
1.429
1 110
1.110
1.000
1.080
1.070
1.078

To verify heteroscedasticity in the linear regression modeland validate the appropriateness of the model we are using in this study, checking whether the variance of the errors from the regression is dependent on the values of the independent variables, werely on Breusch–Pagan. The results (see table 2) show a very low p-value thus the null hypothesis of homoskedasticity is rejected and heteroskedasticity is assumed here.

Table 2. BP test

Variable	BP
Statistic	208.46
Degrees of	8
freedom	O
P-value	0.000

The results of regression are presented below (see table 3) followed by the regression per sector (see table 4). Some variables are significant, and others are not significant. Despite that fact that insignificant variables have to be removed (Xu & Zhang, 2001), the insignificant variables



were not removed to highlight their importance in the sectoral analysis.

**Table 3.** Regression results

Variable         Coefficient (standard error)           18,201.180*           10,950.110)           919,643.700***           (28,617.860)           1SS quality         (379.504)           108.063*           Sustainalytics         (55.657)           ESG score         (114.842)           Women Directors         (56.910)           Women on 4.344         (98.881)           Women employed (65.901)         (41,497.950***           employed (65.901)         (8 321.112)           Observations R² 0.387         Adjusted R² 0.384           Adjusted R² 144.224***         (df = 8)						
Standard error   18,201.180*   (10,950.110)     18,201.180*   (10,950.110)     919,643.700***   (28,617.860)     -561.387   (379.504)     108.063*   (55.657)     86.127   (114.842)     Women Directors     110.132*   (56.910)     Women on	Vorioblo	Coefficient				
Intangibility (10,950.110)  919,643.700*** (28,617.860)  ISS quality (379.504)  108.063* (55.657)  ESG score (114.842)  Women Directors  Women on -4.344 Board (98.881) Women (98.881) Women 294.202*** employed (65.901) Constant (8 321.112)  Observations R <sup>2</sup> 0.387 Adjusted R <sup>2</sup> 0.384  E Statistic (12,950.110)	v ai iable	(standard error)				
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Competitiveness (28,617.860)  ISS quality (379.504)  108.063*  Sustainalytics (55.657)  ESG score (114.842)  Women Directors (56.910)  Women on -4.344  Board (98.881)  Women (98.881)  Women 294.202***  employed (65.901)  Constant (8 321.112)  Observations R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic (144.224***	Intangibility	(10,950.110)				
Competitiveness (28,617.860)  -561.387 (379.504)  108.063* Sustainalytics (55.657)  ESG score (114.842)  Women Directors  Women on -4.344 Board (98.881) Women 294.202*** employed (65.901) Constant (93.81.112)  Observations 1835 R <sup>2</sup> 0.387 Adjusted R <sup>2</sup> 0.384 E Statistic (28,617.860)		010 642 700***				
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Sustainalytics 108.063* (55.657)  86.127 ESG score (114.842)  Women 110.132* (56.910)  Women on -4.344 Board (98.881) Women 294.202*** employed (65.901) Constant (98.21.112)  Observations 1835 R <sup>2</sup> 0.387 Adjusted R <sup>2</sup> 0.384 E Statistic 144.224***		-561.387				
Sustainalytics       (55.657)         86.127       (114.842)         Women       110.132*         (56.910)       (56.910)         Women on       -4.344         Board       (98.881)         Women       294.202***         employed       (65.901)         Constant       -41,497.950***         (8 321.112)       Observations         R²       0.387         Adjusted R²       0.384         I 44.224***       144.224***	ISS quality	(379.504)				
Sustainalytics       (55.657)         86.127       (114.842)         Women       110.132*         (56.910)       (56.910)         Women on       -4.344         Board       (98.881)         Women       294.202***         employed       (65.901)         Constant       -41,497.950***         (8 321.112)       Observations         R²       0.387         Adjusted R²       0.384         I 44.224***		108 063*				
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Women Directors (56.910)  Women on -4.344  Board (98.881)  Women 294.202*** employed (65.901)  Constant (8 321.112)  Observations 1 835  R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***		86.127				
Women Directors  Women on Board Board Women  Women  Explain to the second of the secon	ESG score	(114.842)				
Women Directors  Women on Board Board Women 294.202*** employed Constant  Constant  Observations R <sup>2</sup> Adjusted R <sup>2</sup> E Statistic  (56.910)  -4.344 (98.881)  294.202*** (65.901)  -41,497.950*** (8 321.112)  Observations 1 835 R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 144.224***		110 132*				
Directors         Women on       -4.344         Board       (98.881)         Women       294.202***         employed       (65.901)         Constant       -41,497.950***         (8 321.112)         Observations       1 835         R <sup>2</sup> 0.387         Adjusted R <sup>2</sup> 0.384         F Statistic       144.224***						
Board (98.881) Women 294.202*** employed (65.901) Constant (8 321.112)  Observations 1 835 R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***	Directors	(20.510)				
Women 294.202*** employed (65.901)  Constant (8 321.112)  Observations 1 835  R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***	Women on					
employed $(65.901)$ Constant $-41,497.950***$ $(8 321.112)$ Observations $1 835$ $R^2 0.387$ Adjusted $R^2 0.384$ $144.224***$	Board					
Constant -41,497.950*** (8 321.112)  Observations 1 835 R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***	Women	294.202***				
Constant         (8 321.112)           Observations         1 835           R <sup>2</sup> 0.387           Adjusted R <sup>2</sup> 0.384           F Statistic         144.224***	employed	(65.901)				
Observations 1 835  R <sup>2</sup> 0.387  Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***	Constant	-41,497.950***				
$R^2$ 0.387 Adjusted $R^2$ 0.384 E Statistic 144.224***	Collstant	(8 321.112)				
Adjusted R <sup>2</sup> 0.384  E Statistic 144.224***	Observations	1 835				
E Statistic 144.224***	$\mathbb{R}^2$	0.387				
H Statistic	Adjusted R <sup>2</sup>	0.384				
r Statistic $(df = 8)$	E Statistic	144.224***				
	r Statistic	(df = 8)				
<i>Note</i> : *p<0,1; **p<0.05; ***p<0,01	Note:	*p<0,1; **p<0.05; ***p<0,01				

In Figure 1 we show a Generalized Additive Model with integrated smoothness displaying the average Brand Value trendalong with the average Sustainalytics index and the average ESG Score. We can realize thatfor both indexes and among the majority of the sectors, there is a positive correlation between sustainable firm behavior and their brand value in the US market.

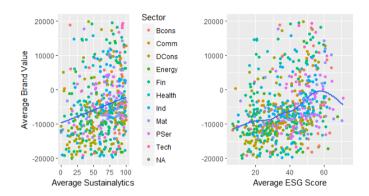


Figure 1 Average Brand Value vs Average Sustainalytics and ESG Score

# V. CONCLUSIONS AND MANAGERIAL IMPLICATIONS AND LIMITATIONS

The results show with a low significance P-V alue that a lower ISS score, leads to a higher brand value. Thus, the better sustainable company behavior practice, impacts positively with a higher brand value. Finally, in all sectors, the more women employed in the business, the higher is the brand value.

With a high Significance, the better the ISS score among the sectors: Basis consumption, industrial, Health, and Technology, the better the brand value.

Table 4. Regression per sector

Variable	Communications	Basic Cons	Discr Cons	Energy	Financial
Intangibility	-258,035.5***	62,865.8**	23,335.2	916.5	-71,715.4
	(60,811.1)	(26,367.0)	(27,388.4)	(79,836.7)	(75,936.0)
Competitiveness	1,348,994.0***	831,189.5**	1,391,795.0*	936,395.2**	2,174,9***
	(142,137.1)	*	**	*	(95,993.9)
	(112,137.1)	(62,027.0)	(123,362.9)	(53,006.3)	
ISS quality	4,758.7**	-3,605.1***	-29.5	-973.863	1,870.0***
	(1,949.1)	(997.649)	(910.6)	(1,672.9)	(571.3)
Sustainalytics	572.9*	-24.8	-20.0	-390.9	-121.3
	(294.7)	(136.7)	(132.6)	(241.2)	(90.1)
ESG score	-2,386.9***	1,166.9***	-581.0**	882.5**	73.6
	(735.3)	(328.1)	(278.2)	(404.9)	(172.7)



Women Directors	434.7	-300.3*	-103.0	110.5	-19.8	
Wollien Directors	(288.1)	(159.8)	(155.6)	(241.2)	(82.9)	
Women on Board	433.1	278.5	-114.6	-164.4	133.2	
	(437.7)	(295.8)	(228.2)	(337.1)	(152.5)	
Woman amplayed	-1,357.3**	-436.4	325.3**	-531.0	-160.9	
Women employed	(582.8)	(217.4)	(135.1)	(460.9)	(179.6)	
Constant	45,701.280	-34,001.6	6,539.2	-35,957.9	-10,339.8	
	(42,728.270)	(27,072.7)	(21,935.7)	(32,400.0)	(14,018.4)	
Observations	111	163	256	92	385	
$R^2$	0.560	0.561	0.359	0.845	0.626	
Adjusted R <sup>2</sup>	0.526	0.539	0.339	0.830	0.619	
F Statistic	16.238***	24.644***	17.313***	56.662***	78.830***	
	(df = 8)	(df=8)	(df=8)	(df=8)	(df=8)	
Note:	*p<0,1; **p<0.05; ***p<0,01					

Table 4. Regression per sector (continued)

Industrial	Materials	Health	Public Serv	Technology
12,173.5	-45,511.6	143,567.8***	-7,846.3	-80,330.3
(8,889.4)	(30,462.4)	(35,980.1)	(17,426.2)	(105,926.2)
706 220 0***	454,530.7**	596,779.0***	254,163.6**	1,844,756.0*
	*	(140,065.9)	*	**
(30,703.7)	(46,578.5)		(27,027.0)	(159,788.6)
-532.9*	-865.9	-4,173.2**	-331.8	-8,532.8***
(309.2)	(557.0)	(1,621.0)	(314.1)	(2,694.6)
-44.2	248.6***	484.8*	-87.5**	-1,501.3***
(51.7)	(73.139)	(260.9)	(41.6)	(475.2)
319.6***	-195.1	640.0	393.2***	1,151.1
(105.4)	(165.2)	(552.8)	(80.0)	(1,009.9)
-108.2***	55.1	141.7	0.7	919.7
(48.2)	(74.7)	(279.1)	(45.7)	(562.3)
33.7	-13.5	-557.8	87.5	-1,885.6**
(81.7)	(154.1)	(512.2)	(57.0)	(760.9)
-375.8***	330.8	-242.7	-111.7	263.3
(102.1)	(206.8)	(428.9)	(149.4)	(808.5)
_1 135 7	_10 &17 //*	-44 046 7	-21 320 2***	36,024.3
*	*	*	,	(74,,515.2)
(0,363.2)	(11,432.1)	(43,301.2)	(1,142.1)	(74,,313.2)
237	164	142	150	135
0.550	0.488	0.376	0.583	0.604
0.535	0.462	0.338	0.560	0.578
34.900***	18.468***	10.010***	24.691***	23.976***
(df = 8)	(df=8)	(df=8)	(df=8)	(df=8)
*p<0,1; **p<0.05; ***p<0,01				
	12,173.5 (8,889.4) 796,228.8*** (56,763.7) -532.9* (309.2) -44.2 (51.7) 319.6*** (105.4) -108.2*** (48.2) 33.7 (81.7) -375.8*** (102.1) -4,135.7 (6,385.2)  237 0.550 0.535 34.900***	12,173.5 (8,889.4) (30,462.4) 454,530.7** (56,763.7) (46,578.5) -532.9* (309.2) (557.0) -44.2 (51.7) (73.139) 319.6*** (105.4) (105.4) (105.2) -108.2*** (58.7) (33.7 (154.1) -375.8*** (309.2) (557.0) -44.2 (74.7) 33.7 (105.4) (165.2) -108.2** (51.7) (73.139) 319.6*** (105.4) (165.2) -108.2** (51.7) (74.7) 33.7 (154.1) -375.8*** (309.2) (74.7) 319.6*** (1154.1) -375.8*** (102.1) (206.8) -4,135.7 (11,432.1) -19,817.4* (6,385.2) (11,432.1) -19,817.4* (11,432.1)	12,173.5	12,173.5       -45,511.6       143,567.8***       -7,846.3         (8,889.4)       (30,462.4)       (35,980.1)       (17,426.2)         796,228.8***       454,530.7**       596,779.0***       254,163.6**         (56,763.7)       (46,578.5)       (27,027.0)         -532.9*       -865.9       -4,173.2**       -331.8         (309.2)       (557.0)       (1,621.0)       (314.1)         -44.2       248.6***       484.8*       -87.5**         (51.7)       (73.139)       (260.9)       (41.6)         319.6***       -195.1       640.0       393.2***         (105.4)       (165.2)       (552.8)       (80.0)         -108.2***       55.1       141.7       0.7         (48.2)       (74.7)       (279.1)       (45.7)         33.7       -13.5       -557.8       87.5         (81.7)       (154.1)       (512.2)       (57.0)         -375.8***       330.8       -242.7       -111.7         (102.1)       (206.8)       (428.9)       (149.4)         -4,135.7       -19,817.4*       -44,046.7       -21,320.2***         (6,385.2)       (11,432.1)       (43,561.2)       (7,742.7)         <

The sustainability score only shows 2 sectors with a significant p – value (see table 4). The more sustainable



the Materials sector is the better is their brand value and the less sustainable the technological sector is, the better is the brand value. In fact, a major challenge for technology firms is to offset sustainable attention with the traditional, profit-driven schemes (Du, et al., 2013). We can realize that among all sectors, the more companies head towards sustainability the higher brand value they would have; and thus, sustainability is a key driver for brands that is considered an engineering tool for companies to implement strategies in their core businesses (Higgins et al., 2016). It is a win-win scenario in enhancing business models and corporate social responsibilities driving innovation (Nidumolu et al., 2009). All this being explained in a better brand value that helps managers take the initiate of changing organization towards practices (Droppelt, 2017).

The more women employed in the Discretionary Consumption sector, the higher is the brand value, and the less women in Communicationsand in the Industrial sector, the higher the brand value. The percentage of women on the management board was not found a significant variable for brand value in any of the sectors in this study which is in alignment of the study of the US corporations' gender on board and firm performance (Carter et al., 2010).

As for the ESG score, the more environmental the Social and Governing the Industrial, public service, Basic consumption and Energy sectors, the higher the brand value is, which coincides with the findings of Lai (Lai et al., 2010). In comparative research on industrial policy strategies, the interest has shifted from a broad vision to sectoral analysis(Kitschelt, 1991) which are enforced in our study where the majority of those sectors (Kang, 2012) require more depth analysis for each of those scores and their reporting that effect on their core business and on the Brand value (Maas et al., 2016).

Nevertheless, Communications and Discretionary consumption as well as the financial show a significant negative relationship. The latter could be because of the nature of the first two sector and can be considered a limitation to this study in the financial sector whose governance factor analysis measurement has been facing major changes since the financial crisis (Kirkpatrick, 2009). There corporate governance lessons from the financial crisis could help companies quantifying the corporate socially responsible variable in this sector

improve the estimation to further test it on their brand value and customer perception. In the communications sector, a better-governed firm are relatively more profitable (Yasser, 2011) but the lack of governance indictors in the United States in this sector could be proposed for future research to test its effect with more in depth indicators on Brand value and Company practices.

Due to the absence data and lack of uniformity among data reporting sets (Hardt-Schultz, 2015). approximation of the firm behavior factors is considered a limitation to this study, and there is a need for further research for a better reporting to make sustainability function (Epstein, 2018). The pharmaceuticals industry is in process of a new paradigm shift (Blum-Kusterer et al., 2001); being a challenge to the event industry (Pelham, 2011), there is more interest for deep sectoral research for CO<sub>2</sub> emissions report (Bernard et al, 2015) along with the acknowledgment of climate change that does impact sustainability practices positively (Elijido-Ten, 2017). Furthermore, we relied on publicly traded companies, so the need to check on the small and medium sized enterprises (O'Gorman, 2001) and the strategies for implementing sustainability is still a challenge (Crews, 2010) and in deed new tools in businesses can enhance those practices (Schaltegger, 2016).

Brands call the attention to consumers and enable them to recall the product or service(Nedungadi& Hutchinson, 1985)and due to the need of developing consciousness of the environment, social and governmental concept that is already in place (Herremans& Reid, 2010), it could be an engineering tools to be achieve a better brand value. Through this, more business sectors would improve their business practices, implement more governance tools and get a better brand value. This enforces the idea of the governance structure (Grandori, 1997) that was already stated an essential variable in the organizational analysis for management to consider a vital business driver in nowadays business (De Villiers et al, 2016). We suggest that our analysis and review in this paper provide a helpfulbasis for further exploration with detailed sectors to experiment how can sustainability improve business models(Bocken et al., 2016) and how can those drivers improve their business practices (Papagiannakis et al., 2014) to be part of every one's tasks (Esty et al., 2010) reflected in a better brand value and better practices (Doppelt, 2017).



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