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# Sustainability Practices, Performance and Competitiveness in the Export Furniture Industry Management

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***Abstract:*** Stakeholders' increasing concern with sustainability has been encouraging firms to adopt practices aimed at minimizing their negative externalities. The aim of the current article is to investigate the impact of adopting sustainability practices on the performance and competitiveness of the Brazilian furniture industry. Environmental management variables, operational practices, social practices focused on both the employees and the community were herein considered sustainability practices. Results have indicated the positive association of operational and social practices with sustainability performance and competitiveness. However, such behavior was not observed in environmental practices. The current study has shown the way each sustainability dimension influences performance by encouraging managers to invest in social and environmental practices, and by contributing to systemic changes on behalf of sustainability. Evidence has confirmed that investing in sustainability practices helps improving companies' performance and competitiveness.

***Keywords:*** Furniture industry; sustainability practices; performance; competitiveness; organizational sustainability.

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## Introduction

Some managers still believe that the term 'sustainability', as popular as it has become, can be measured in terms of profit or loss; however, it should be measured based on companies' actions to ensure the "wellbeing of billions of people and the health of our planet" (ELKINGTON, 2018, p. 3).

Therefore, finding alternatives to curb the excessive use of resources (ADAMS et al., 2016) to reduce social inequality and to maintain companies' competitiveness remains a challenge (DUARTE; GOMES; NEVES, 2014; DAS, 2018). Companies must take into consideration that their role in society goes beyond generating profits and jobs, given their size, quantity and scope. The climate, water resources, forests, oceans and biodiversity remain at risk, despite some successful stories (ELKINGTON, 2018).

Consumers have been paying more and more attention to companies' performance when it comes to the environmental, social and economic dimensions of the Sustainability Tripod (Triple Bottom Line - TBL) (ELKINGTON, 2006). Sustainable businesses, in the broad sense, means companies' ability to persist (overtime) in practices that benefit both the environment and society, as well as to present satisfactory economic results by adopting these practices (ELKINGTON, 1994; 2006; GULISANO et al., 2018).

The furniture industry, which has been showing growth trend at national and international level, is inserted in this scenario (ABIMÓVEL – ASSOCIAÇÃO BRASILEIRA DAS INDÚSTRIAS DE MOBILIÁRIO, 2019). This sector is one of the most important in the Brazilian manufacturing industry due to its potential to generate job positions and cash flow. Santa Catarina State is the largest furniture exporter in the country; it is followed by Rio Grande do Sul and São Paulo states (SEBRAE - SERVIÇO BRASILEIRA DE APOIO ÀS MICRO E PEQUENAS EMPRESAS, 2013).

Companies belonging to the furniture sector have realized that investing in sustainability can lead to important competitive differentials, mainly in companies from emerging countries, such as Brazil, which need to build good reputation to gain room in the international market (GALINARI; TEIXEIRA; MORGADO, 2013; AZIZI; MOHEBI; FELICE, 2016).

The relevance of approaching the furniture sector is justified by its potential to grow both in the national and international market (ABIMÓVEL, 2019). Thus, this sector must pay attention to the increased number of consumers concerned with sustainability issues, as well as face this trend as business opportunity, in order to grow, since sustainability practices encompass a series of competitive advantages for companies.

Furthermore, the specific literature about the sustainability tripod in the furniture sector remains poorly developed (MALEK; DESAI, 2020), and it opens a window of opportunities for further investigations. Most sustainability studies focused on investigating the industrial activity are carried out in developed countries; they mainly take into consideration environmental and economic aspects and only focus on topics such as energy efficiency, water consumption reduction and product design (MALEK; DESAI, 2020).

The following research question is herein set based on the aforementioned context:

what is the impact of sustainability practices on the performance and competitiveness of exporting companies belonging to the Brazilian furniture sector? The aim of the current study was to analyze the influence of adopting sustainability practices on the performance and competitiveness of exporting companies belonging to the Brazilian furniture sector.

Evidences reported in previous studies have pointed towards positive association between environmental (MASSOTE; SANTI, 2013; MARCON et al., 2017; FERRI; PEDRINI, 2018), economic (BAMFORD et al., 2015; DAS, 2018; ABU et al., 2019) and social sustainability practices (DUARTE; GOMES; DAS NEVES, 2014; MANI et al., 2016; DAS, 2017; STANISKIENE; STANKEVICIUTE, 2018), and companies' performance and competitiveness.

In addition to filling a gap in the literature (MALEK; DESAI, 2020), the relevance of the current study lies on the fact that sustainable practices have impact on companies' performance, as well as can be the source of competitive advantages (NIDUMOLU; PRAHALAD; RANGASWAMI, 2013; ADAMS et al., 2016). Information about companies' sustainability helps decision makers to perceive, understand and manage the systemic effects of human activities (ELKINGTON, 2018).

In addition, managers investing time and resources to implement sustainability practices feel the need of understanding how these practices influence companies' performance dimensions (KNOX; MAKLAN, 2004).

## THEORETICAL BACKGROUND

### Sustainability and performance

Companies have adopted practices to preserve resources for future generations, as well as to mitigate social inequalities, in order to become more sustainable (ADAMS et al., 2016). They must meet aspects addressed in the Triple Bottom Line (ELKINGTON, 1994), as well as fully comply with its economic, social and environmental dimensions, to be truly sustainable. "The TBL agenda focuses corporations not just on the economic value that they add, but also on the environmental and social value that they add – or destroy." (ELKINGTON, 2013, p. 13).

Based on sustainability reports issued by organizations and audited by external agencies, some advances have been noticed in the sustainable development field (ELKINGTON, 2018). The adoption of sustainability practices - even of those implemented to enable compliance with laws and regulations - opens room for innovations capable of generating economic, social and environmental value (NIDUMOLU; PRAHALAD; RANGASWAMI, 2009).

Adopting environmental sustainability practices can help improving business performance since it enables reducing costs, conserving the environment during production processes, efficiently using raw materials, reducing the use of toxic materials, recycling materials, using renewable energy sources and reducing greenhouse gas emissions (RAO

et al., 2009).

Massote and Santi (2013) investigated clean-production implementation in a Brazilian furniture company aimed at achieving eco-efficiency. Results have shown that, in addition to its economic benefits, this process also reduced environmental impacts. The adopted management tools enabled identifying, evaluating and implementing actions that resulted in 66% water consumption savings and 3% reduction in raw material inputs, as well as in 23% reduction in solid waste and 93% reduction in effluent amounts. In addition, production cost per unit has dropped and the environmental performance of the investigated company has improved, since it was no longer necessary cutting 3,900 adult pine trees and the emission of 13,100 kg of carbon dioxide was avoided.

Likewise, Lucato Costa and Oliveira Neto (2017) observed positive association between eco-efficiency level and financial performance in micro-, small- and medium-sized companies operating in the Brazilian textile sector. This finding enabled inferring that companies' good performance in the environmental dimension helped improving their profitability.

Santos, Godoy and Campos (2019) investigated key factors used to assess the performance of environmental aspects in the furniture industry supply chain, based on literature analysis and validation substantiated by the Delphi method. Results have shown that providing products with proper ecodesign, having an Environmental Management System, controlling pollution levels, reducing natural resources' consumption and using inputs that do not harm the environment are relevant aspects to assess the environmental sustainability of companies operating in the furniture sector.

Seles et al. (2019) investigated the effect of the economic crisis (2013 to 2017) on the association between environmental management practices and business performance in Brazilian companies. Their results have shown that the adoption of environmental management practices had positive effect on companies' environmental and business performance, even during the economic crisis. However, the aforementioned crisis has weakened the association between these practices and environmental performance, likely due to cuts in companies' budgets.

Ferri and Pedrini (2017) compared the contribution of socio-environmental practices adopted throughout purchasing processes to improve purchasing companies' economic, competitive and risk mitigation performance. The assessment of 189 international purchasing companies operating in Italy has shown that social practices affected risk mitigation at purchase time, since they met stakeholders' expectations and protected companies from the negative impact of eventual scandals.

Bamford et al. (2015) investigated one food and one healthcare company in the UK and found that leaner processes had generated strategic benefits and that the total or partial adoption of leaner processes was closely related to external pressures, such as the one advocating for the adoption of quality standards.

Abu et al. (2019) investigated furniture companies in Malaysia showed that most companies adopting management practices, aimed at reducing costs and at improving product quality, have increased their efficiency, provided cleaner and more organized

work environment, and improved the use of their physical space.

Organization leaders have significant influence on the implementation of sustainability practices and on the integration of these practices to companies' strategies (PHAM; KIM, 2019). Pham and Kim (2019) investigated the association between sustainability practices and sustainable performance moderated by the leadership effect of managers working in the civil construction sector. Among their findings, it is worth emphasizing positive association between environmental, social and economic sustainability practices, and sustainable performance.

Companies can improve their social sustainability through philanthropic activities, such as building or renovating schools or making donations to NGOs. Most importantly, managers should take into consideration the needs of the community their company is inserted in at the time to formulate their strategies (MANI et al., 2016).

Das (2018) observed positive association between community-oriented social practices and companies' performance in this dimension. However, according to the aforementioned author, assessing performance in the social dimension requires time enough for managers to measure to what extent investments made in this dimension turn into improved quality of life for both companies' employees and the local community.

Hale et al. (2019) measured the social sustainability performance of two anonymous cases in the food industry; they realized that this measurement type is challenging, since it requires to take into consideration the conditions of the society the investigated company is insert in, as well as establishing iterative processes to define the indicators to be evaluated.

With respect to the social dimension of sustainability, it is important assessing aspects associated with employees' physical and mental health by taking into account whether they are exposed to a healthy work environment that offers training and career development opportunities (ERDIL; AKTAS; ARANI, 2018). Other relevant social indicators comprise improved work environment, reduced incidence of health issues and accidents, and local development based on the needs of the surrounding community (HSU; CHANG; LUO, 2017; SOUZA; ALVES, 2018).

Despite the social cost inherent to the manufacturing activity, companies can reduce the negative effects of their activity, improve their long-term performance and increase stakeholders' confidence in them by investing in Corporate Social Responsibility (CSR) practices. Assumingly, strategically treated social activities can influence companies' performance by generating environmental, social and economic benefits, due to improvements in their reputation before customers and employees, as well as to their social legitimacy (DUARTE; GOMES; DAS NEVES, 2015).

Das (2017) has emphasized that companies must also take into consideration employees' perspective on sustainability practices, since they are organizations' main asset. Challenges inherent to the labor market end up encouraging companies to adopt employee-oriented social practices to motivate their collaborators (STANISKIENE; STANKEVICIUTE, 2018).

According to the empirical study conducted by Staniskiene and Stankeviciute (2018), employees tend to be more proactive when they perceive organizations' efforts to establish equal opportunities for all, as well as a more transparent working relationship. Zhu et al. (2016) investigated Chinese state-owned companies and concluded that social practices, mainly those associated with workers' rights and with work-related accident prevention, are positively correlated to companies' performance. The justification for such a correlation lies on the fact that employees get more committed to their companies, which start attracting better qualified workers.

According to Sughanti (2019), CSR practices have strong influence on companies' market performance, whereas the internal implementation of environmental sustainability practices encourages employees to become more engaged with this kind of practices. Both environmental and social sustainability practices had positive influence on employees' behavior, when they were analyzed in separate. This outcome was attributed to companies' stronger commitment to employees' training and well-being.

Since studies available in the literature indicate the association between sustainability practices and performance, the following hypotheses are herein proposed:

**$H_1$:** Environmental sustainability practices have positive association with organizational performance.

**$H_2$:** Economic sustainability practices have positive association with organizational performance.

**$H_3$:** Employee-oriented social sustainability practices have positive association with organizational performance.

**$H_4$:** Community-oriented social sustainability practices have positive association with organizational performance.

**Sustainability and competitiveness**

According to the competitiveness analysis model by the German Development Institute (DIE - *Deutsches Institut für Entwicklungspolitik*), companies must be able to sustain or expand their position in the market in order to be considered competitive.

Competitiveness is associated with companies' ability to get competitive advantages based on the value added to their products and services, on how they are perceived by customers or on the differentiation of products and services provided by them (ROCHA; VENDRAMETTO (2014). Thus, competitive advantage precedes performance, since it leads to different results depending on the different value appropriation strategies adopted by companies (TANG; LIOU, 2010).

Managers believed, for a long time, that investments in sustainability inherently involved choosing between benefits resulting from the positive image conveyed by the adoption of rigorous environmental standards and costs involved in pollution prevention and cleaner production processes (PORTER; VAN DER LINDE, 1995).

However, the challenge of becoming more sustainable forces companies to look for alternatives to meet the pressure by customers, competitors and suppliers, such as reducing costs and improving their productivity and flexibility – this factor makes companies more competitive (PORTER; VAN DER LINDER, 1995).

Among the key performance indicators, one finds improved market share, as well as customers' capture and retention due to improved quality and productivity (HSU, CHIH-HUNG; CHANG, AN-YUAN; LUO, 2017). The incorporation of lean production practices (as observed in TQM and Six Sigma) - such as shortening inputs/finished products' delivery time and achieving total equipment effectiveness to reduce waste in all processes - is also relevant to help improving companies' sustainability and operational performance (SOUZA; ALVES, 2018).

Rubashkina, Galeoti and Verdolini (2015) investigated the strengths and weaknesses of the "Porter Hypothesis" proposed by Porter and Van der Linde (1995), based on a sample comprising companies from 17 European countries, from 1997 to 2009. According to the aforementioned authors, productivity gains are the factor strengthening the argument of the Porter Hypothesis that regulations on sustainability make companies more competitive because, by complying with these regulations, they are forced to find ways to produce better quality products by operating with smaller inventories, at lower cost.

The adoption of sustainability practices - even in cases strictly motivated by regulations - can take companies to other innovation levels. It is achieved by pursuing other technology types and rethinking products, services and processes. Some companies only follow the lowest sustainability standards without realizing that if they are avant-garde in adopting the most demanding standards, they can better differentiate from their competitors and get the competitive advantages of "first movers" (pioneers) (NIDUMOLU; PRAHALAD; RANGASWAMI, 2009).

However, sustainability practices and their respective environmental, social and economic performance measurements cannot be taken into consideration in separate, since, together, they have positive influence on companies' competitiveness (DAS, 2017). Environmental sustainability measures affect product quality, which is a determining factor for competitiveness (DAS, 2018).

Managers accounting for implementing Environmental Management practices, as well as for monitoring companies' performance in this field, should make stronger efforts to sensitize operation and supply chain managers to see environmental sustainability practices as processes integrated in companies' operational and competitiveness indicators, rather than as isolated practices (DAS, 2018).

Community-oriented social sustainability practices are directly and positively linked to competitiveness in Indian companies. Although they require considerable investment to improve the quality of life of individuals in the surroundings of the company, and although they can be negatively seen in the short term, the long-term performance of these practices leads to improvements in the economic status, schooling and health conditions of the local community (DAS, 2018).

Duarte, Gomes and Neves (2014) confirmed the hypotheses that CSR practices

improve companies' image by making them more attractive to high-level workforces. Therefore, CSR practices can be the source of competitive advantages resulting from the recruitment of better qualified employees. It is so, because the best candidates compete for job positions made available by companies and take into consideration both the image and advantages presented by them.

According to Das (2018), managers should take into consideration that resources allocated to employee-oriented CSR practices must encourage them to commit to the good performance of practices proposed by companies and to help increasing their competitiveness.

Madueño et al. (2016) have found statistical evidence of direct and indirect association between the performance of social sustainability practices and the competitiveness of small- and medium-sized companies. In other words, practices associated with employees, environment and customers help improving companies' social performance; consequently, they help improving companies' competitiveness.

According to Mani et al. (2016), companies focused on implementing social sustainability practices for suppliers and customers obtain benefits, such as reduced operational risk and increased organizational learning capacity. In addition, they create a trust relationship with their suppliers, who start offering higher-quality products adapted to customers' demands. Moreover, companies project a more positive image among their stakeholders as they strive to improve the quality of life of individuals living in their surrounding areas.

Gallardo-Vázquez and Sanchez-Hernandez (2014) advocate that CSR practices should be addressed by companies as strategic issues. Thus, they defined a scale encompassing social, economic and environmental issues, as well as analyzed the cause and effect relationship between organizational performance in these dimensions and companies' competitiveness. They applied tests in Spain and observed positive association between community-oriented social sustainability practices and companies' competitiveness in that country.

The following hypotheses are presented in order to meet the research aims, based on the herein exposed theoretical framework:

**$H_5$:** Environmental sustainability practices have positive association with organizational competitiveness.

**$H_6$:** Economic sustainability practices have positive association with organizational competitiveness.

**$H_7$:** Employee-oriented social sustainability practices have positive association with organizational competitiveness.

**$H_8$:** Community-oriented social sustainability practices have positive association with organizational competitiveness.

## METHODOLOGICAL PROCEDURES

The current research followed the descriptive method, with quantitative approach, based on standardized data collection procedures and on statistical data processing techniques. Reliability and generalizability are important factors in the current study, since the herein adopted approach enables analyzing large data amounts (MASCARENHAS, 2018).

The study population comprised companies operating in the Brazilian furniture sector that are listed in the company database provided by the Ministry of Economy and that exported products in 2018, as shown in Table 1.

**Table 1 – Population and sample.**

| Companies operating in the Brazilian furniture sector | N | Balance |
|---|---|---|
| Furniture companies listed in the Ministry of Economy | 407 | 407 |
| Bankrupt or in judicial recovery | 30 | 377 |
| Could not be contacted or refused to respond | 10 | 367 |
| Refused to respond | 7 | 360 |
| Total number of responses | 83 | 23.05% |
| Sample comprising valid questionnaires | 80 | 22.22% |

Source: Research data.

A questionnaire comprising 46 questions, based on 5-point Likert scale, translated and adapted from Das (2017), was used as data collection technique. Das (2017) has conceptualized and developed a scale to measure sustainability practices adopted by a given company, as well as its performance in the environmental, social and operational dimensions and in competitiveness. Then, a research instrument was developed based on studies available in the literature and on data collected from 255 companies.

The questionnaire, whose construct is shown in Table 1, was applied in electronic environment, where it remained available from April 30 to June 7, 2019.

**Table 1 – Research construct**

| SUSTAINABILITY PRACTICES ADOPTED IN SUPPLY CHAIN MANAGEMENT PROCESSES | | |
|---|---|---|
| Environmental Management Practices (EMP) | EMP1 | Environmental management practices adopted by our organization are structured in compliance with the ISO 14001 certification or with the comparable Environmental Management System. |
| | EMP2 | We provide project/design specifications to suppliers about environmental compliance per purchased item. |
| | EMP3 | We help our suppliers to set environmental management systems and/or to get the ISO 14001 certification. |
| | EMP4 | We address our customers' environmental concerns by establishing eco-friendly products' design/project and distribution. |
| | EMP5 | We address our customers' environmental concerns by adopting cleaner production processes. |
| | EMP6 | Our products have been designed to consume less raw material and energy during the production process. |
| Operational Practices (OP) | OP1 | We make the implementation of Total Quality Management, Six Sigma and Total Productive Maintenance by our suppliers easier in order to create quality products. |
| | OP2 | We support our suppliers' Value Engineering to help reducing costs with components. |
| | OP3 | We consistently follow the Just-in-Time inventory control technique to maintain inventory and to minimize expenses. |
| | OP4 | We keep our production lean and try to minimize expenses in all actions. |
| | OP5 | We aim at achieving economies of scale in the incoming transport of inputs and raw materials and in the outgoing transport of finished products. |

| | | |
|---|---|---|
| Supply Chain Management (SCM) | SCM1 | We update our production plan based on our customers' needs and we share it with our suppliers. |
| | SCM2 | Our organization quickly responds to the needs of our customers, since it maintains a proper inventory. |
| | SCM3 | We estimate our customers' future needs based on realistic assessments. |
| | SCM4 | We quickly inform our suppliers about our customers' future needs. |
| Employee-oriented Social Inclusion Practices (EoSIP) | EoSIP1 | Advanced safety measures adopted by the organization reduce the risk of accidents. |
| | EoSIP2 | Our organization provides a positive and healthy work environment for our employees. |
| | EoSIP3 | Slave, forced or child labor is not allowed in our organization. |
| | EoSIP4 | Wages and benefits paid to employees are enough to cover their basic needs. |
| | EoSIP5 | Employees are entitled to vacation, social security and health care, among other benefits. |
| Community-oriented Socially Inclusive Practices (CoSIP) | CoSIP1 | We provide job and business opportunities to the local community. |
| | CoSIP2 | We provide medical assistance to the local community. |
| | CoSIP3 | We help primary education units focused on individuals living in the area surrounding our organization. |
| **Performance Measurements applied to Sustainability Practices in Supply Chain Management Processes** | | |

| | | |
|---|---|---|
| Competitiveness-related Performance Measurement (CPM) | CPM1 | Improving the levels of services based on equal or smaller inventory. |
| | CPM2 | Improving the quality of products and services. |
| | CPM3 | Improving the use of organization's capacity/productivity. |
| | CPM4 | Better competitive advantages in terms of offering differentiated products to customers. |
| | CPM5 | Customer base retention. |
| | CPM6 | Better opportunities for the company to reach and win new customers. |
| | CPM7 | Improving company's image because it is considered "green" (environmentally responsible). |
| Environmental Performance Measurement (EPM) | EPM1 | Reduced costs with effluent treatment and discharge. |
| | EPM2 | Reducing toxic waste discharge (solid, liquid or gaseous). |
| | EPM3 | Reducing the frequency of environmental accidents. |
| | EPM4 | Reducing the frequency of accidents in the operational sector. |
| | EPM5 | Local biodiversity protection. |
| Operational Performance Measurement (OPM) | OPM1 | Reducing production costs. |
| | OPM2 | Reducing energy consumption. |
| | OPM3 | Improving inbound logistics' (inputs/raw materials) efficiency. |
| | OPM4 | Improving outbound logistics' (finished goods) efficiency. |
| Employee-based Social Performance (EbSP) | EbSP1 | Reducing inequalities in the wage, among other benefits, paid to employees working at the same hierarchical level. |
| | EbSP2 | Reducing differences in permissible compensation packages (wages + benefits) paid to employees working at different hierarchical levels. |
| | EbSP3 | Improving organization's working environment and workers' morale. |

| | | |
|---|---|---|
| Community-based Social Performance (CoSP) | CbSP1 | Improving the company's image based on its accountability towards the community. |
| | CbSP2 | Better job and business opportunities generated by the organization to the local community. |
| | CbSP3 | Improving the education level of individuals living in the area surrounding the company. |
| | CbSP4 | Extending the time individuals remain disease-free by improving health services provided by the organization. |

Source: Das, 2017.

The internal performance measurement can be taken as the operational performance in this construct, since it measures companies' operational efficiency. Competitiveness, in its turn, can be considered the external performance measurement, since it evaluates companies' performance in different aspects of customers' needs in comparison to competitors (DAS, 2017).

Arithmetic means of sustainability practices were calculated; calculations took into consideration environmental, social and economic practices to perform the analyses. Global sustainability performance, which comprised mean values recorded for environmental, social and economic performance, as well as for competitiveness, was also calculated.

Factor analyses were performed, reliability test was applied to each construct, and standard deviation and variance were calculated - standard deviation was within acceptable levels. Correlation matrices were developed for constructs at significance level of 0.05; Kaiser-Meyer-Olkin test was applied for sampling adequacy at minimum value 0.7 and Bartlett's sphericity test was carried out.

Reliability test based on Cronbach's Alpha was performed; 0.7 was set as its minimum value. Constructs referring to sustainability practices recorded Cronbach's Alpha 0.871, whereas constructs of sustainability practices recorded 0.835. Multi-linear regression was used to analyze the hypotheses; the following parameters were used to validate the linear regressions: residuals' normality, homoscedasticity, lack of residuals' self-correlation, non-multicollinearity and parameters' linearity.

## Results' analysis and discussion

Table 2 presents the descriptive statistics of constructs referring to Sustainability, Performance and Competitiveness Practices.

**Table 2 – Descriptive analysis of mean values recorded for Sustainability, Performance and Competitiveness Practices**

| **Panel A - Sustainability Practices** | **Min.** | **Max.** | **Mean** | **Standard Deviation** | **Variance** |
|---|---|---|---|---|---|
| Environmental Management Practices | 1 | 5 | 3.443 | 1.0157 | 1.032 |
| Operational Practices | 2 | 5 | 3.908 | 0.7807 | 0.610 |
| Employee-oriented Social Practices | 2 | 5 | 4.458 | 0.6055 | 0.367 |
| Community-oriented Social Practices | 1 | 5 | 3.254 | 0.9311 | 0.867 |
| **Panel B – Performance and Competitiveness** | **Min.** | **Max.** | **Mean** | **Standard Deviation** | **Variance** |
| Environmental Performance | 2 | 5 | 4.250 | 0.644 | 0.415 |
| Operational Performance | 1 | 5 | 4.157 | 0.753 | 0.568 |
| Employee-based Social Performance | 1 | 5 | 3.739 | 0.8981 | 0.807 |
| Community-based Social Performance | 1 | 5 | 3.939 | 0.8277 | 0.685 |
| Global Sustainability Performance | 3 | 5 | 4.063 | 0.578 | 0.335 |
| Competitiveness | 3 | 5 | 4.087 | 0.6016 | 0.362 |

Source: Research data.

Based on data in Table 2, the highest mean value was recorded for Employee-oriented Social Inclusion Practices (4.45). Likely, most companies invest in this prevention type because fines associated with labor lawsuits are very expensive, and because of internal pressures. The lowest mean value was recorded for Environmental Management Practices (3.44) likely because these practices require higher investment in both efforts and resources to be implemented.

With respect to performance and competitiveness, Table 2 shows that Operational Performance recorded the highest mean value among performance measurements (4.15), likely because managers give priority to this dimension - it was followed by Competitiveness (4.08).

Table 3 presents results observed for the influence of sustainability practices on the performance and competitiveness of companies operating in the furniture sector. Based on these results, Environmental Sustainability Practices did not show significant association with the performance or organizational competitiveness dimensions. Thus, it was not possible confirming hypotheses H1 (environmental management practices have positive association with organizational performance) and H5 (environmental management practices have positive association with organizational competitiveness).

These results can be explained by the fact that most of the furniture industry (98%) is formed by micro- and small-sized companies (OBSERVATÓRIO FIESC, 2020). This factor may be associated with poor acknowledgement of the relevance of caring for environmental issues, as well as with more restricted financial availability to optimize the use of energy resources and raw materials. Even if these companies make some investment in this field, it may not have impact on their competitiveness due to their size.

**Table 3 – Coefficient of multi-linear regression models between sustainability and performance practices, and competitiveness**

| Explanatory Variables (constants) | EP | OP | EbSP | CbSP | GSP | COMP |
|---|---|---|---|---|---|---|
| Constant | 0.002 | 0.013 | 0.341 | 0.964 | 0.001 | 0.001 |
| MeanESP | 0.068 | -0.125 | 0.168 | 0.038 | 0.16 | -0.051 |
| Mean EcSP | 0.352** | 0.738* | 0.333** | 0.432*** | 0.662*** | 0.742*** |
| MeanSIPE | 0.253** | 0.042 | 0.075 | 0.210** | 0.189** | 0.160** |
| MeanSIPC | 0.156* | 0.090 | 0.196** | 0.271*** | 0.201*** | 0.115* |
| F Statistic | 13.194*** | 18.085*** | 9.986*** | 19.974*** | 54.477*** | 44.576*** |
| Adjusted $R^2$ | 0.382 | 0.464 | 0.313 | 0.490 | 0.730 | 0.688 |
| VIF | From 1.082 to 2.363 | | | | | |
| DW | 2.085 | 1.946 | 1.748 | 2.000 | 2.048 | 1.992 |
| Pesarán-Pesarán | 0.744 | 0.199 | 0.366 | 0.754 | 0.104 | 0.641 |

***significant at 1%, ** significant at 5%; * significant at 10%

EP – Environmental Performance
OP – Organizational Performance
EbSP – Employee-based Social Performance
CbSP – Community-based Social Performance
GSP – Global Sustainability Performance
COMP - Competitiveness

Source: Research data.

Results differed from the ones reported in previous studies that found positive association between Environmental Sustainability Practices and performance (RAO et al., 2009; MASSOTE; SANTI, 2013; SELES et al., 2019), and competitiveness (FERRI; PEDRINI, 2017; SELES et al., 2019). However, they are similar to findings reported by Das (2018) and Lucato, Costa and Oliveira Neto (2017), who found statistically significant association between the performance of environmental sustainability practices and companies' economic or financial performance.

It is possible inferring that the herein addressed environmental practices imply

high cost capable of compromising investments in other areas or that only some practices forming the MeanESP variable are effective in having positive impact on performance and competitiveness. Assumingly, the herein addressed companies are starting to invest in such practices and they have not yet achieved return on investments.

However, some aspects, such as the Sustainability of the Brazilian Furniture Industry (SIMB - *Sustentabilidade da Indústria do Mobiliário do Brasil*), are gradually changing in the Brazilian furniture sector. SIMB is part of the Brazilian Furniture project, which is an initiative started by the Brazilian Association of Furniture Companies (ABIMÓVEL - *Associação Brasileira das Indústrias de Mobiliário*) to help companies implementing sustainability actions to become more competitive in an increasingly attentive international market supported by stricter rules about environmental care (BRAZILIAN FURNITURE, 2020).

Data presented in Table 3 enabled confirming hypotheses H2 and H6, as well as evidenced positive and significant association between mean values recorded for Economic Sustainability Practices (MeanEcSP) and for organizational performance and competitiveness. Such findings are in compliance with studies that reported similar associations between economic practices and companies' performance and competitiveness (DAS, 2018; ABU et al., 2019).

Adopting management techniques to reduce costs without losing quality or functionality, as well as focusing on continuously improving and using resources in a more efficient manner, help companies to increase their competitive advantages over their competitors and to gain potential to reach and win new customers.

Abu et al. (2019) investigated Malaysian furniture companies and observed that most companies adopting practices to reduce costs and to improve product quality have managed to increase their efficiency, as well as to provide cleaner and more organized work environments. According to Bamford et al. (2015), it is essential adopting leaner production practices to improve companies' quality and efficiency, as well as to help them increasing their competitiveness.

Hypotheses H3, H4, H7 and H8 were confirmed by positive association between Socially Inclusive Practices for Employees and for the Community, and companies' performance and competitiveness. Studies have indicated that CSR practices overall contribute to improve sustainability performance, since they have positive impact on employees' "pro-environmental" behavior (PHAM; KIM, 2019).

Companies engaged in social responsibility practices improve their corporate image and influence stakeholders' opinion about their attractiveness (DUARTE; GOMES; DAS NEVES, 2014). In addition, employees who have the opportunity to prove their potential and to participate in decision-making processes become defenders of their company's image (DAS, 2018). According to Zhu et al. (2016), the implementation of CSR practices improved both the financial and social performance of Chinese state-owned companies.

It is possible inferring that the adoption of socially inclusive practices for employees improves companies' corporate image and creates the potential to improve both their environmental and social performance, since their employees tend to be more committed to the proposed environmental practices.

These practices (MeanSIPE) did not show positive association with Operational Performance; this outcome was in compliance with findings reported by Das (2018). They also did not show significant association with Employee-Oriented Social Performance when the overall mean recorded for the investigated practices was taken into consideration; this outcome was not in compliance with findings reported by Hale et al. (2019).

By adopting practices to improve employees' quality of life in the work environment, companies can also improve their competitiveness, since they reduce absenteeism. Data from RAIS (RELAÇÃO ANUAL DE INFORMAÇÕES SOCIAIS, 2019), presented in the FIESC Observatory report (2020), show that, in addition to the fact that absences from work have decreased from 24.72% in 2018 to 10.76% in 2019, 94% of them referred to non-work-related illnesses.

Results recorded for MeanSIPE's influence on competitiveness were in compliance with studies reporting that socially inclusive practices for employees have impact on companies' attractiveness to potential candidates, as well as that attracting qualified personnel is essential for companies' process to become more competitive (DUARTE; GOMES; NEVES, 2014; MADUEÑO et al., 2016).

It is possible saying that since Socially Inclusive Practices for Employees have positive influence on Community-based Environmental and Social Performance and on Global Sustainability Performance, their positive influence on Competitiveness is an expected consequence. It is so, because companies must have motivated employees, who are committed to organizational purposes, in order to be competitive in the market.

Thus, the higher the employees' schooling, the more qualified the operational workforce, and it could also improve service levels. Another point to be taken into consideration lies on the fact that companies allowing employees' children to have easier access to primary education encourage their workers to perform their duties better. This factor justifies the positive association of MeanSIPC with Performance and Competitiveness.

The current results corroborated those reported by Mani et al. (2016), who showed that giving opportunities to local suppliers, helping to build schools, promoting entrepreneurship in the local community and providing job opportunities for individuals living in companies' surrounding area are important factors capable of improving social performance indicators.

The current results were also similar to findings reported by Gallardo-Vázquez and Sanchez-Hernandez (2014), who observed positive association between CSR practices and companies' competitiveness at regional level, based on CSR practices focused on the community living in companies' surrounding area.

## Conclusions

The aim of the current study was to analyze the influence of sustainability practices on the performance and competitiveness of exporting companies operating in the Brazilian furniture sector. In order to do so, descriptive research based on quantitative approach

was carried out through the application of a questionnaire-based survey.

The fact that economic and social sustainability practices have shown positive association with performance and competitiveness is explained by the fact that the economic practices addressed in the present study are already seen as routine by companies, since they are closely linked to the operational field and tend to enable satisfactory financial results in the short-term. On the other hand, social practices are already acknowledged for improving corporate image, mainly before the surrounding community, where companies often cause negative externalities and where these social actions work as compensation form.

Original results associated with previous studies available in the literature reported that environmental sustainability practices did not show significant association with environmental performance; this finding was not in compliance with previous studies addressed in the literature review. However, the implementation of economic and social practices improved Environmental Performance, and it enabled inferring that the efficient use of resources, even with purely financial motivations, as well as investments in employees' motivation and in improving the quality of life of the surrounding community, reduced companies' environmental impact.

These results can be explained by the fact that economic dimension-related practices, which were herein linked to increased efficiency in the operational sector, aim at enabling a more efficient use of resources as a whole, including raw materials, which mainly comprise timber and represent high costs for the furniture industry. Thus, enabling a more efficient management and use of resources can lead to satisfactory economic outcomes, as well as benefit the environment.

Based on the current results, sustainability dimensions cannot be analyzed in separate and individuals should commit to help implementing good practices focused on reducing companies' environmental impacts. In addition, environmental practices can also help improving individuals' quality of life and generating opportunities for the community living in companies' surrounding areas.

In academic terms, the current study has contributed to encourage debates about sustainable development. It also showed that the sustainability dimensions influence each other's performance, and that these dimensions and their respective performances have positive association with organizational competitiveness.

It is worth emphasizing the contribution of the current findings to companies, since it is relevant knowing the sustainability practices capable of reflecting on certain organizational performance dimensions at the time to invest time and money to make business more sustainable. Furthermore, the current study can be also used to trigger insights, because it pragmatically suggests - to managers working in the furniture sector - what tends to help improving sustainability performance and competitive advantages. It is so, because consumers are increasingly aware of the origin of products acquired by them.

Future studies should include other matters regarding performance, or apply the questionnaire to other links in the furniture sector's supply chain, in order to investigate customers and suppliers' perception about sustainability practices. They should also

investigate whether national culture factors can moderate the association between sustainability practices and sustainability performance, and/or adopt a qualitative approach to investigate how associations observed in the present research actually take place.

On the other hand, the current study has some limitations, such as the fact that it did not address topics like innovation, business model, value creation, gender and equity issues in the questionnaire. The economic dimension addressed in the questionnaire can also be considered a limitation, since it was limited to investigating practices aimed at reducing costs through efficiency.

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# Práticas de Sustentabilidade, Desempenho e Competitividade na Gestão da Indústria Moveleira Exportadora

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***Resumo:*** A crescente preocupação dos stakeholders com a sustentabilidade motiva as empresas a adotar práticas que minimizem suas externalidades negativas. O objetivo do artigo é investigar o impacto da adoção de práticas de sustentabilidade no desempenho e na competitividade de indústrias brasileiras do setor moveleiro. Como práticas de sustentabilidade foram consideradas variáveis de gestão ambiental, práticas operacionais, práticas sociais para funcionários e para a comunidade. Os resultados indicaram relação positiva das práticas operacionais e sociais com o desempenho em sustentabilidade e com a competitividade. Contudo, tal comportamento não foi verificado para as práticas ambientais. O estudo evidencia como cada dimensão da sustentabilidade influencia no desempenho, motivando gestores para investir em práticas socioambientais, contribuindo para uma mudança sistêmica em prol da sustentabilidade. As evidências confirmam que o investimento em práticas de sustentabilidade melhora o desempenho e a competitividade das empresas.

***Palavras-chave:*** Indústria moveleira; práticas de sustentabilidade; desempenho; competitividade; sustentabilidade organizacional.

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# Prácticas de sostenibilidad, desempeño y competitividad en la gestión de la industria del mueble de exportación

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***Resumen:*** La creciente preocupación de los stakeholders en sostenibilidad ha motivado a las empresas a adoptar prácticas que minimicen sus externalidades negativas. El objetivo del artículo es investigar el impacto de la adopción de prácticas de sostenibilidad en el desempeño y la competitividad de la industria brasileña del mueble. Se consideraron las prácticas de sustentabilidad, variables de gestión ambiental, prácticas operativas, prácticas sociales para los empleados y la comunidad. Los resultados indicaron una relación positiva de las prácticas operativas y sociales con el desempeño de la sustentabilidad y la competitividad. Sin embargo, dicho comportamiento no se verificó para las prácticas ambientales. El estudio muestra cómo cada dimensión de la sustentabilidad influye en el desempeño, motivando a los gerentes a invertir en prácticas sociales y ambientales, contribuyendo a un cambio sistémico a favor de la sustentabilidad. La evidencia confirma que invertir en prácticas de sostenibilidad mejora el desempeño y la competitividad de las empresas.

***Palabras-clave:*** Industria del mueble; prácticas de sostenibilidad; rendimiento; competitividad; sostenibilidad organizacional.