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# Towards Sustainability through Higher Education: Sustainable Development incorporation into Portuguese Higher Education Institutions.

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# 1. Introduction

## STUDY RELEVANCE

The studies about SD in HEIs are still scarce in Portugal, and there is no known study that refers to existing practices in Portuguese's HEIs (Madeira, 2008).

Tauchen and Brandli (2006) published a study where they systematized the different procedures for environmental management system implementation, based on good practices, including practices of the Portuguese HEIs, but it only studied the environmental dimension.

# 1. Introduction

## **General objective:**

- Describe how SD has been incorporated in Portuguese's HEIs, through information available on institutional HEIs websites.

## **Specific objectives:**

- Identify the SD practices adopted by Portuguese Public HEIS and formally communicated in the institutional websites;
- Compare the SD practices adopted by Portuguese HEIS by size, type, and stage of the SD implementation in HEIs.

# 2. Theoretical Framework

## Issues of practices of sustainable development in HEIs

<b>Environmental</b>	Declarations and actions related with HEIs involvement in environmental issues and resource scarcity (environment of used sustainable resources; prevention of pollution; protection of environment and biodiversity; restoration of natural habitats; ecological footprint; non-renewable resources; depletion of materials; degradation).
<b>Economic</b>	Declarations and actions related to the direct economic impact and financial sustainability of HEIs (financial situation; achieved results; efficiency).
<b>Social/Cultural</b>	Declarations and explanations on policies and procedures concerning aspects of human rights (labor practices and decent work; human rights; quality of life, occupational health and safety; the equity dimension; training of employees, involvement in social issues and action within HEIs community).
<b>Institutional/ Educational/Political</b>	Declarations and actions explanation of the HEIs views, values, strategy, transparency in the governance and ethical compromises. Also Declarations, comments, and linking to the national and international criteria on aspects of sustainable development. It was also considered the practices in education, research, university operations (e.g., certifications), external community and assessment and reporting.

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# 3. Factors inducing the implementation of SD practices at HEIS and development of hypotheses

## 1. Institution size

*H1 There will be a positive relationship between the size of institution and SD in Portuguese HEIs*

## 2. Institution type

*H2 There will be more SD practices in Universities than in the Polytechnics in Portugal*

## 3. Stage of implementation of SD in HEIs

*H3 The implementation of SD practices at Portuguese HEIs is in its early stages*

## 4. Method

- Sample: 34 public Portuguese's HEIs (20 polytechnics and 14 universities).
- Data analyzed: Institutional main websites.
- The data collection was carried out from December 1, 2014 to February 28, 2015.
- Method of data analysis: content analysis (Bardin 2014; Krippendorff 2013).



## 4. Method

- We developed a coding system, listing all the practices, based on literature review.
- The final coding system contains 124 practices of SD in HEIs, distributed as follows:
  - environmental (27)
  - economic (12)
  - social/cultural (39), and
  - institutional/educational/political (46).



## 4. Method

- A global index of SD practices ( $GI_i$ ) was developed for each HEI.

$$GI_i = 0.25EnI_i + 0.25EcI_i + 0.25SI_i + 0.25II_i$$

$$GI_i = 0.25 \frac{PEN_i}{27} \times 100\% + 0.25 \frac{PEc_i}{12} \times 100\% + 0.25 \frac{PS_i}{39} \times 100\% + 0.25 \frac{PI_i}{46} \times 100\%$$

$PEN_i$  Sum of environmental SD practices disclosed in the website of the  $i$ th HEI ( $i = 1, \dots, 34$ )

$PEc_i$  Sum of economic SD practices disclosed in the website of the  $i$ th HEI ( $i = 1, \dots, 34$ )

$PS_i$  Sum of social/cultural SD practices disclosed in the website of the  $i$ th HEI ( $i = 1, \dots, 34$ )

$PI_i$  Sum of institutional/educational/political SD practices disclosed in the website of the  $i$ th HEI ( $i = 1, \dots, 34$ )

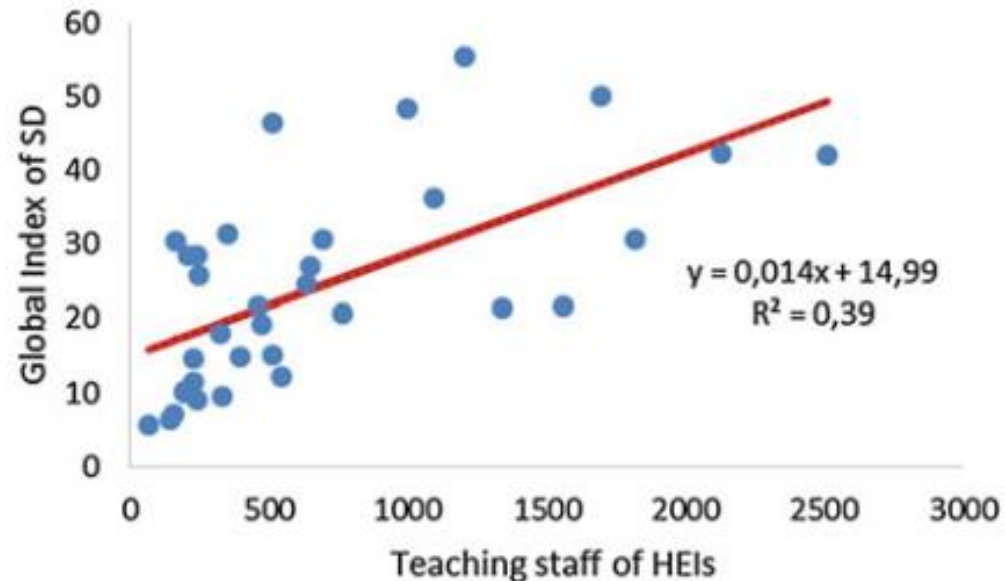
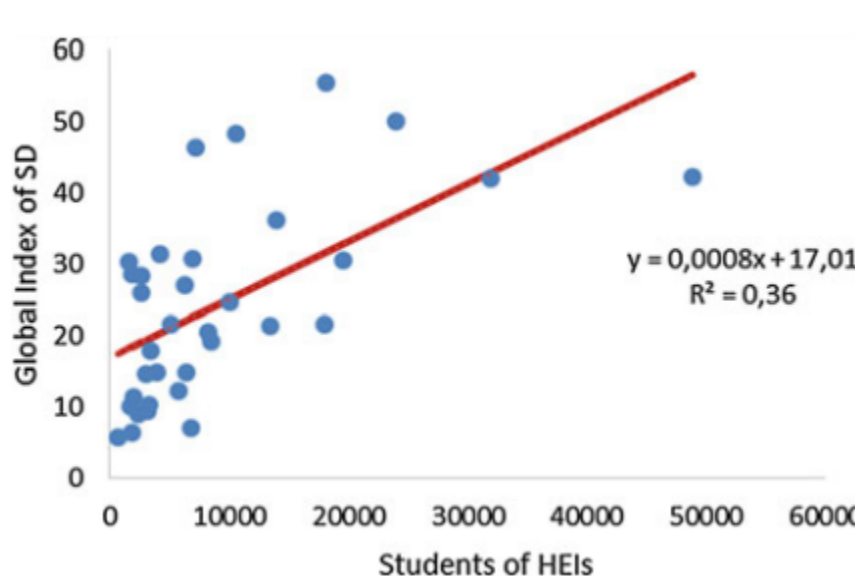
# 5. Results

**H1:** *There will be a positive relationship between the size of institution and SD in Portuguese HEIs*

There is a positive significant relationship between the size of HEIs and number of SD practices, measured both through the number of students ( $b = 0.0008$ ,  $p < 0.001$ ;  $R^2 = 0.36$ ) and the number of teaching staff ( $b = 0.014$ ,  $p < 0.001$ ;  $R^2 = 0.39$ ).

# 5. Results

**H1:** *There will be a positive relationship between the size of institution and SD in Portuguese HEIs*



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# 5. Results

**H2:** *There will be more SD practices in Universities than in the Polytechnics in Portugal*

The percentage of SD practices in Universities are higher (Global index of SD = 31 %) than in Polytechnics (Global index of SD = 20 %) in all dimensions.

# 5. Results

**H2:** *There will be more SD practices in Universities than in the Polytechnics in Portugal*

**Table** Global indexes of SD by type of HEIs

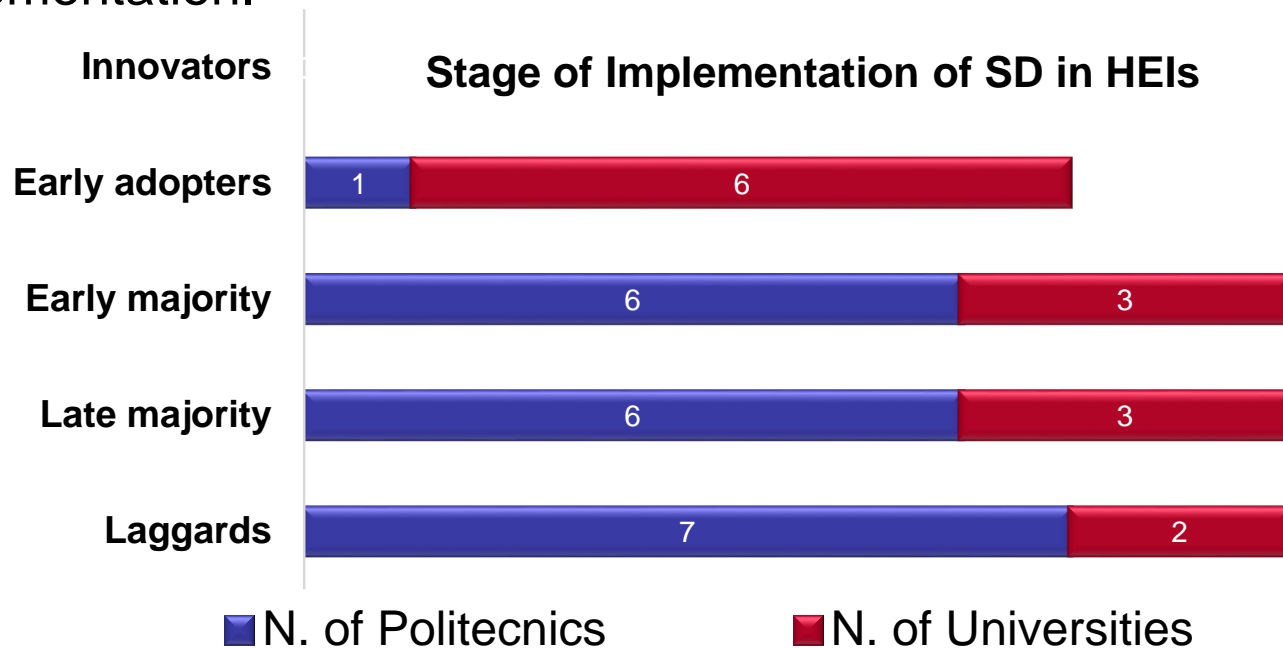
	Mean of universities' global index (%)	Mean of polytechnics' global index (%)	Global mean of global index (%)
Environmental index	17	8	11
Economic index	45	34	39
Social index	42	28	33
Institutional index	20	10	14
Global SD index	31	20	24

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# 5. Results

**H3:** *The implementation of SD practices at Portuguese HEIs is in its early stages*


More than 50 % of the HEIs are in early stages (laggards and late majority; Rogers, 1995; Lozano, 2006; Lozano et al., 2013) of SD implementation.



# 6. Conclusions

- **Our findings reveal that the websites communicate mainly the economic and social/cultural practices of the Portuguese HEIs.**
- **We observed a positive association between communication of SD practices and (a) institution size and (b) type of institution.**
- **More than 50 % of the Portuguese HEIs are in the early stages of SD implementation and communication.**
- **Future research should focus on the barriers of implementation for SD and the perception of stakeholders of HEIs a their commitment to SD.**

# 7. References

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**Thank you for your attention!**

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