

6th International Workshop - Advances in Cleaner Production

São Paulo - Brazil - 24th to 26th, May - 2017

Performance of the Triple Bottom Line on Brazilian Industrial Production

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Agenda

1. Introduction and Objectives
2. Triple Bottom Line and the industries
3. Industries Management and Productive Competitiveness in Brazil
4. Methods of study
5. Results and Discussion
6. Conclusions

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Introduction and Objectives

I. Development articulated with Brundland's report (1987)
“Development which meets the requirements from present without compromising the capacity to the futures generations to satisfy its needs”

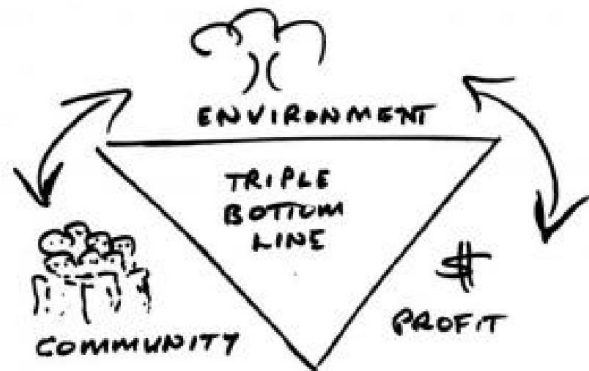
II. The Solution to the 3BL's questions (3BL) requires all the facets and the commitment from all of the parts of the society, including government, civil Society and the private industrial sector.

Introduction and Objectives

III. The industrial sector is decisive to the sustainable development.

IV. What factors of Triple Bottom Line act over the Brazilian industrial process?

Triple Bottom Line and the industries



The main idea to support the paradigm 3BL which the success and the company's health must not be measured only from traditional production methods, but also by its social dimension and performance (MARKLEY, DAVIS, 2007).

Quinn e Baltes (2007) 45% of the leaders were aware of the 3BL's concept. The greatest barrier to overcome is the missing comprehension inside the organization

Management structure and the Productive competitiveness in Brazil

- I. According to Kollmann e Stöckmann (2007), the organizations find new problems to keep itself more competitive, and, according to them, the technological Revolution and the increasing globalization are the greatest challenges for the managers
- II. Considerable consequences to the environment
- III. Methodology that ensures the competitive success with sustainable growth.

Management structure and the Productive competitiveness in Brazil

•Tab. 1: –*Ranking of Brazil's industrial competitiveness and economic performance (2010-2015)*

Year	Ranking Position of Industrial Competitiveness	Ranking Position of Economic Performance
2010	38	37
2011	44	30
2012	46	47
2013	52	42
2014	54	43
2015	54	44

Management structure and the Productive competitiveness in Brazil

PI

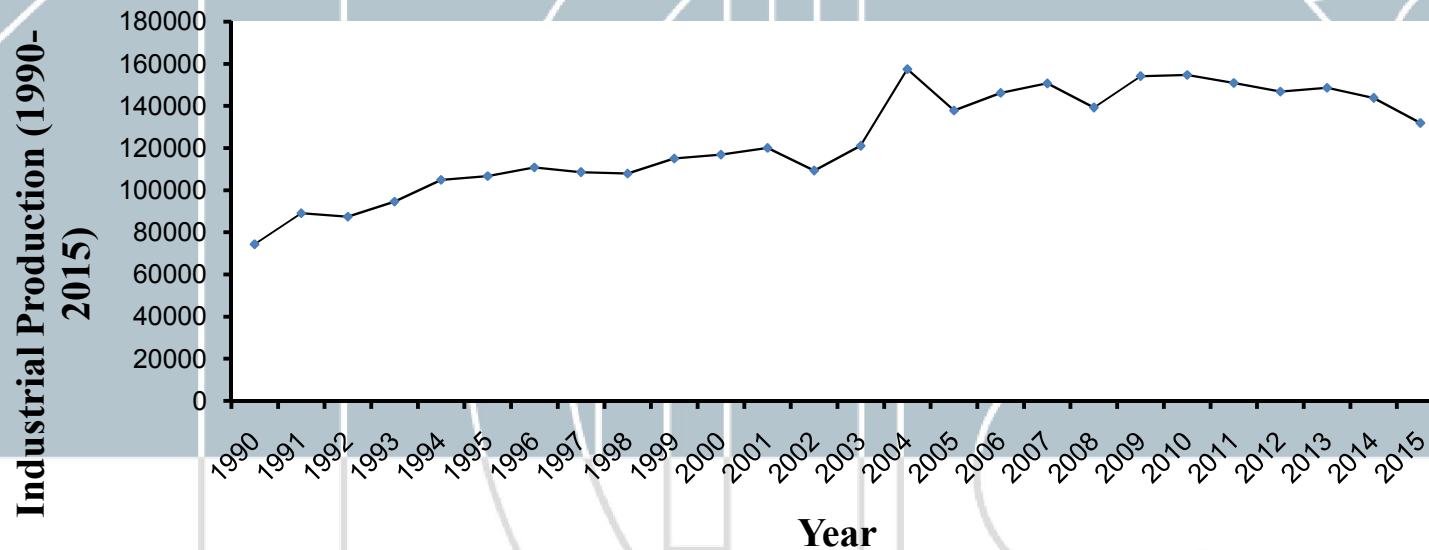


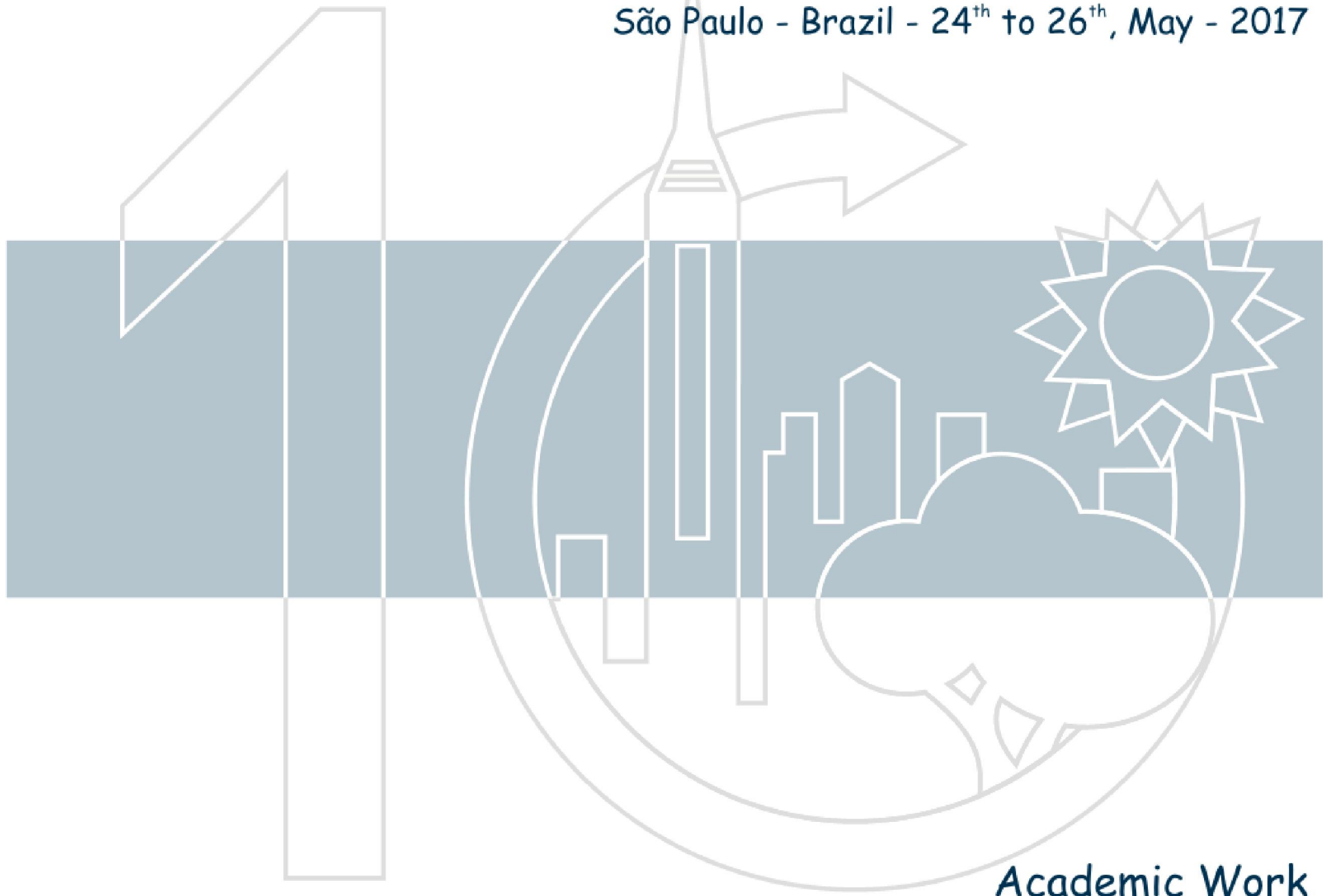
Fig. 1. Industrial Production between the years 1990-2015 according to the IBGE

Methods of Study

- I. Brazilian Institute of Geography and Statistics (IBGE)
- II. World Bank (World Bank)
- III. International Energy Agency (IEA)
- IV. United Nations Development Program (PNUD)

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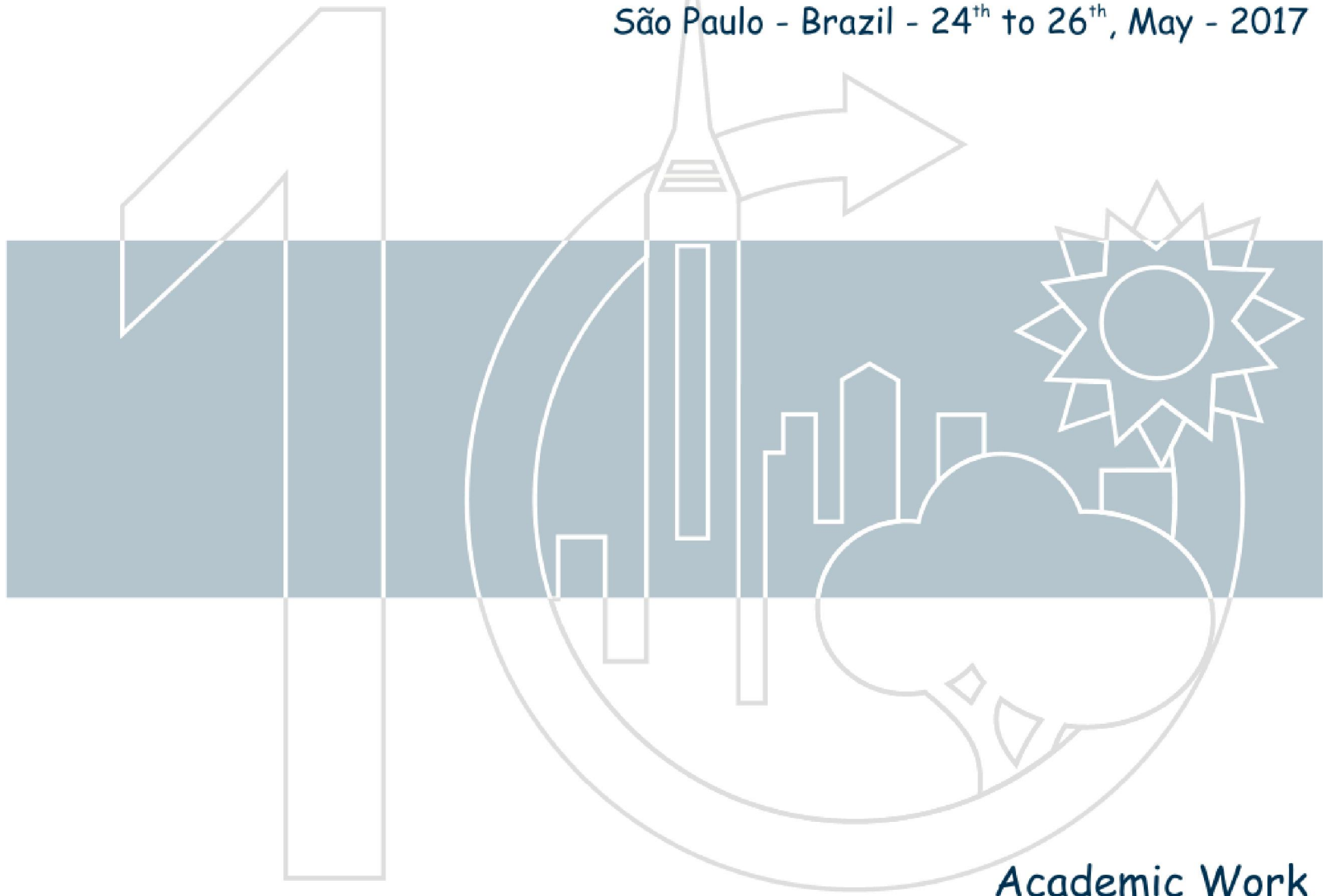
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Methods of Study

Validation Test

I. Multi-collinearity

II. ANOVA TEST

III. Akaike

Analyses of Residues

I. Normality test

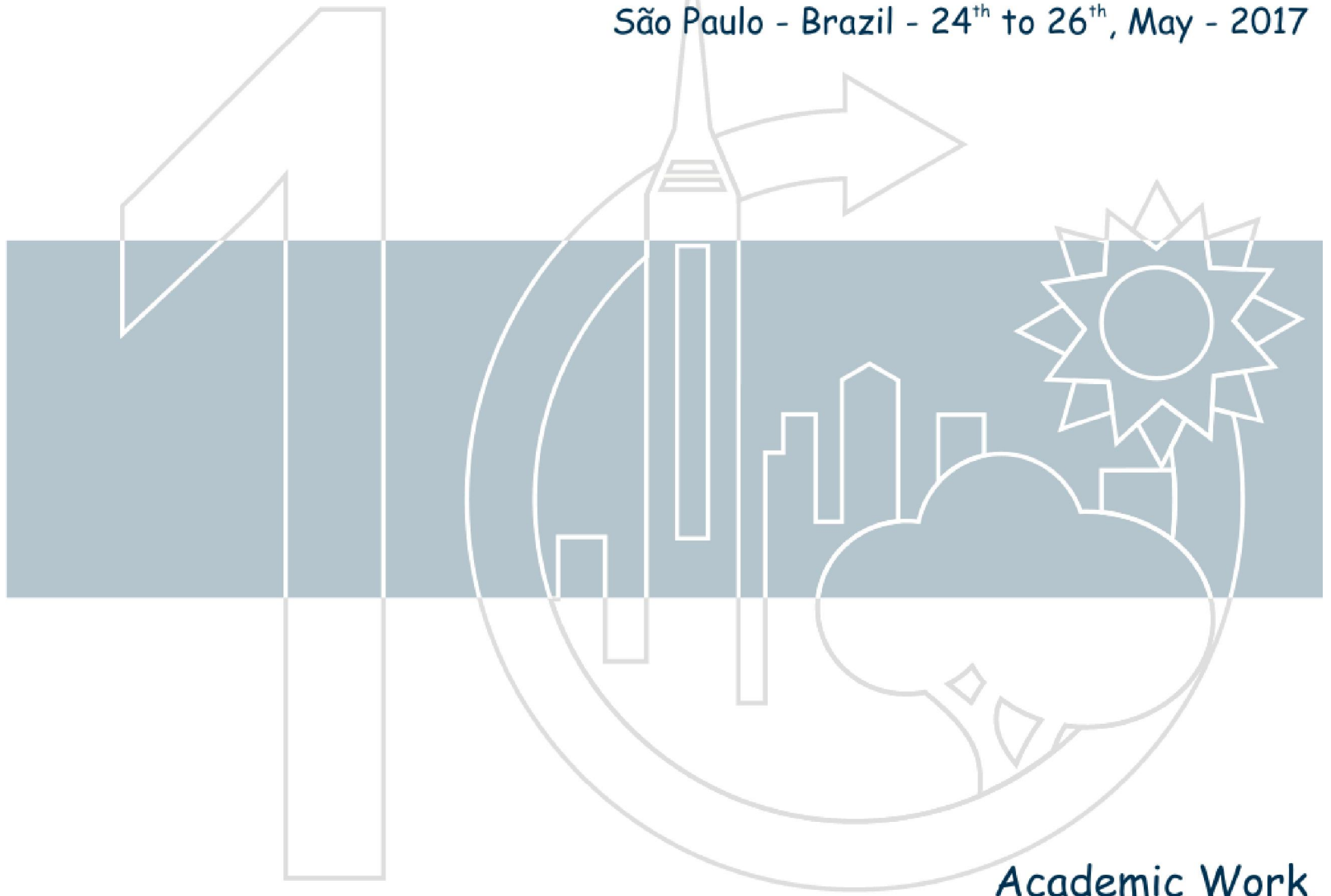
II. Homoscedasticity test

III. Dependence test.

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Results and Discussion

$$IP = -46200 + 36500CO_2 + 1100WF - 853HDI \quad (1)$$

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Results and Discussion

WF- workforce x Production

CO2-

CO2

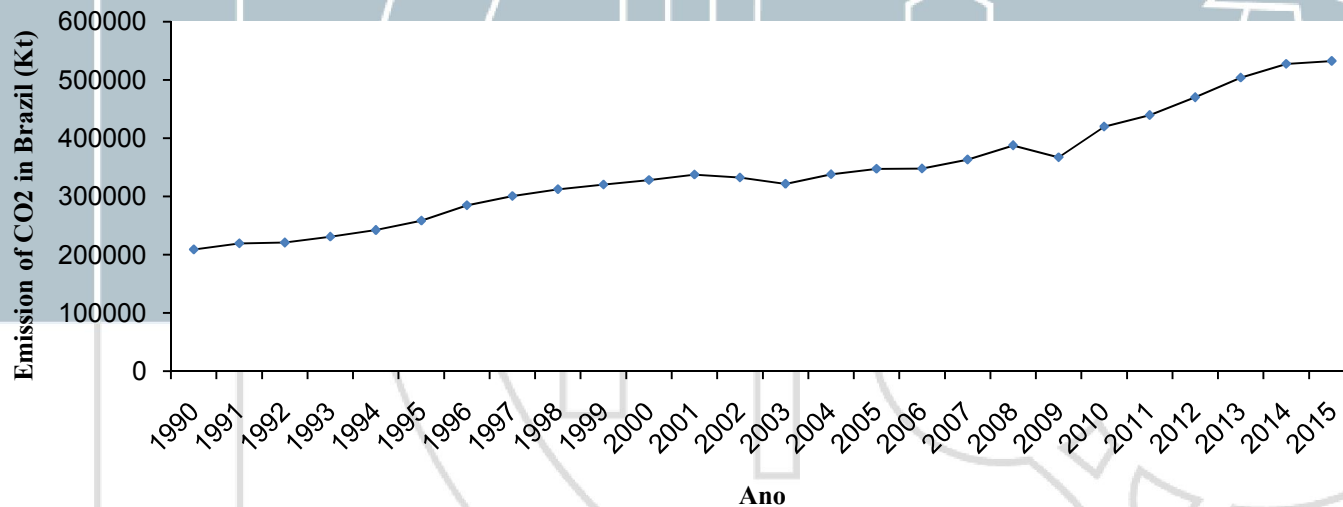


Fig.2: Emission of carbono dioxide in Brazil, in the period between 1990 to 2015

Results and Discussion

Metallurgical



$R^2=0,865$

Petrochemical



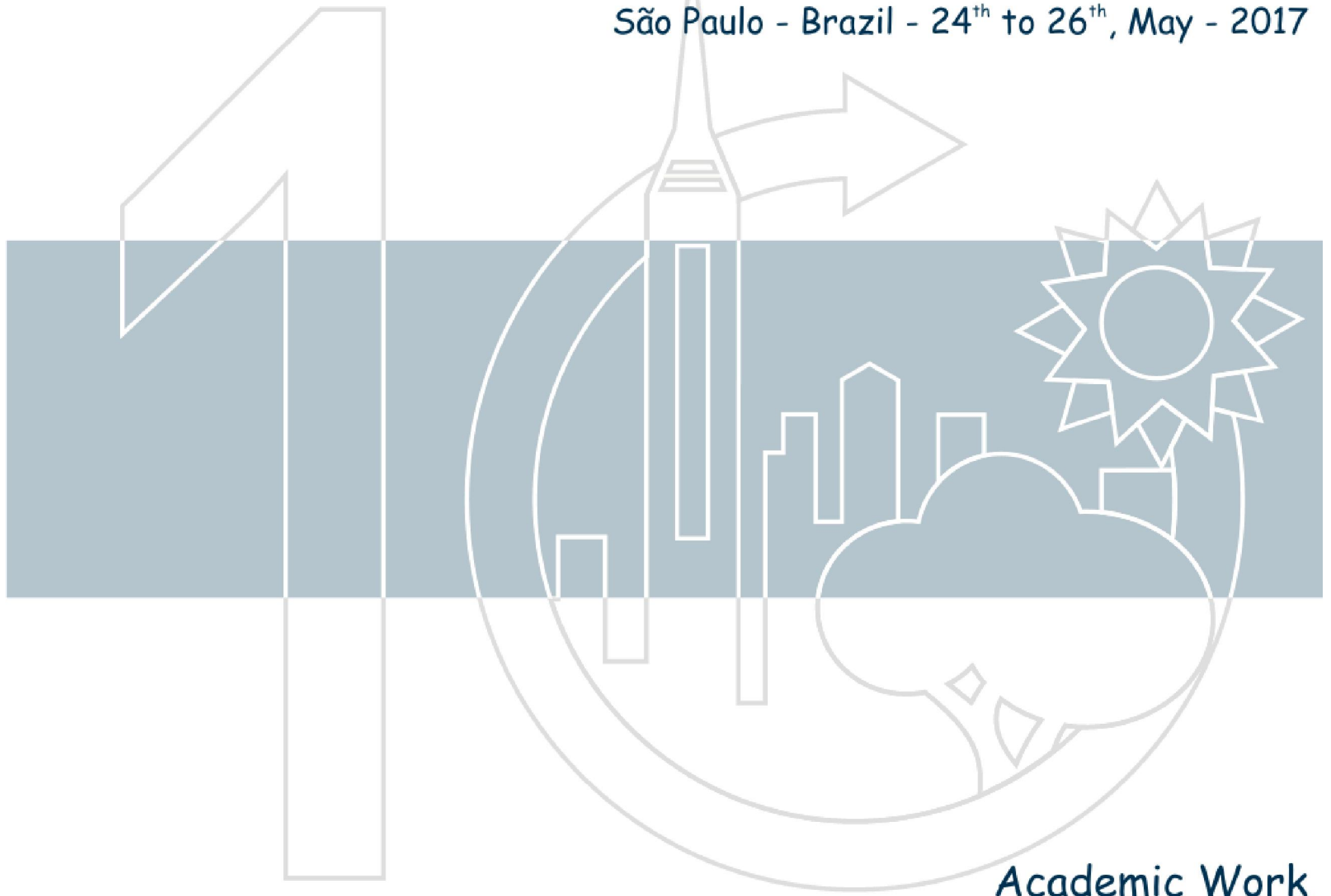
$R^2=0,927$

Opening of new companies
 $R^2=0,093$

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Conclusions

1. Sixteen factors- 3 affect the industrial production:

HDI, CO₂ e WF

2. No economic factor sets in Hybrid Model

3. Not entered into Hybrid model, due to its values-p had not been significant, the factors:

TR, FI, GDPind, FFB, NRtotals(income), GEGE, EC, TP e PG.

4. The concept of sustainability hasn't influenced the Industrial Production in Brazil yet, especially because this concept is not even incorporated culturally inside the industries.

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Thank You!

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