



gLOCAL
EVALUATION WEEK
2022

Measuring impact in Higher Education Institutions

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Projeto Métricas / Fapesp





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Evolution of research indicators 1960s – 2010s →

Period	Based on theory	Underpinning technology	Intention	Indicators	Measures
1960-1980	National Innovation systems	Census	Establish a national science base	Frascati Manual (OECD, 1963)	Inputs to universities
1980-2010s	Institutions as suppliers and users of knowledge.	Research and intellectual property databases.	Establish research capacity	Conventional research indicators, citation indexes, rankings	Outputs of universities
2010s →	Science, technology and innovation as a complex ecosystem	Complex interoperable databases, open citation architecture.	Respond to the concerns of society	Complex and relational indicators of social impact, Indicators embedded in narrative structures	Impact of university activity on society



Indicators of impact

Impact has two distinct used meanings:

- **The change that university activity has on scientific understanding – academic impact**
 - The most common proxy for this impact is through citations
- **The change that university activity has on the world outside the academy – in social, environmental, technological or political spheres**
 - The most common proxies for this type of impact is evidence from stakeholders



Measuring local impact in Brazil

These three approaches in public communication of impact have different focuses, different methods of presentation, and different audiences.



Best practices
Embrapa
Social
Balance

www.embrapa.br/balanco-social-2020

The Embrapa Social Balance looks into the social goods produced by the publicly-owned agricultural research institute in its **technology transfer**, in **job creation** by Embrapa's technology, its **direct and indirect ROI** and the number of people that its social projects have reached.

Available from: <https://www.embrapa.br/balanco-social-2021>



Best practices Embrapa Social Balance

www.embrapa.br/balanco-social-2020

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41.475
empregos novos
criados em 2020

Número estimado de novos empregos gerados no ano de 2020, mesmo diante dos desafios da pandemia da Covid-19, apenas pelas tecnologias avaliadas neste Balanço Social.

Veja os indicadores de impacto



59
prêmios e
homenagens

Em 2020, a Embrapa, seus empregados, seus produtos, suas ações e seus projetos receberam diversos prêmios, dos quais 29 internacionais, 9 científicos, 11 nacionais e 10 regionais.

Confira a lista de reconhecimentos



R\$ 61,85
bilhões de lucro
social

Nesta edição, foram analisados impactos de uma amostra de 152 tecnologias e aproximadamente 220 cultivares, que representaram 98,2% do lucro social demonstrado em 2020.

Descubra o impacto de cada solução



R\$ 17,77
para a sociedade
brasileira por
real aplicado

A relação do lucro social com a Receita Operacional Líquida foi de 17,77. Isso indica que o retorno anual superou em 17 vezes o valor investido na Empresa em 2020.

Conheça os números do balanço social



Best practices

The social impact of Unicamp

[Atvars, Da Cunha, Laplane, Melo, Rodrigues and Santos](#) measured the **direct and indirect impact of university** activity of Unicamp on the city of Campinas, and found that **18.3 billion reais were generated by the university, signifying 21 % of the city's entire GDP,** demonstrating the key role that the university has on the **wellbeing and prosperity of a major urban centre.**

Available from:

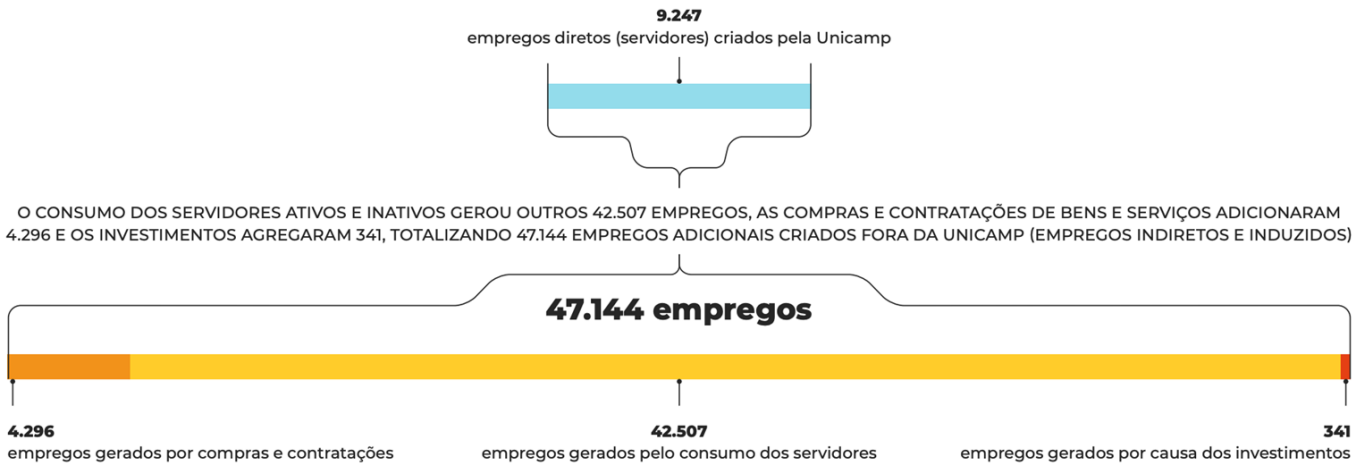
https://www.cgu.unicamp.br/assets/docs/cgu/estudo_impacto_socioeconomico/DOCUMENTO%201%20-%C2%AOIMPACTO%20SOCIOECON%C3%94MICO%20DA%20UNICAMP.pdf



Best practices The social impact of Unicamp

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OS RECURSOS QUE A UNICAMP DEVOLVEU À ECONOMIA TAMBÉM GERARAM EMPREGOS FORA DA UNIVERSIDADE



O CONSUMO DOS SERVIDORES ATIVOS E INATIVOS GEROU OUTROS 42.507 EMPREGOS, AS COMPRAS E CONTRATAÇÕES DE BENS E SERVIÇOS ADICIONARAM 4.296 E OS INVESTIMENTOS AGREGARAM 341, TOTALIZANDO 47.144 EMPREGOS ADICIONAIS CRIADOS FORA DA UNICAMP (EMPREGOS INDIRETOS E INDUZIDOS)

IMPACTO TOTAL: POSTOS DE TRABALHO CRIADOS DENTRO DA UNICAMP (9.247) + FORA DA UNIVERSIDADE (47.144) = 56.391 EMPREGOS

717
EMPRESAS ATIVAS

no cadastro de empresas nascidas na Unicamp em 2019

31.343

EMPREGOS E CERCA DE
R\$ 8.020 MILHÕES
DE FATURAMENTO

AS EMPRESAS "FILHAS" DA UNICAMP

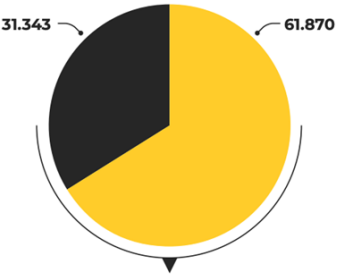
IMPACTO TOTAL NO PIB, GERADO PELAS EMPRESAS FILHAS DA UNICAMP, ESTIMADO A PARTIR DOS DADOS DO SISTEMA DE CONTAS NACIONAIS DO IBGE, FOI NESSE ANO DE R\$ 7.484,1 MILHÕES DE EFEITO RENDA, INCLUÍDOS NESSE VALOR R\$ 886,7 MILHÕES DE IMPOSTOS INDIRETOS



R\$ 7.484,1 milhões

61.870

empregos adicionais criados pelas empresas nascidas na Unicamp, além dos 31.343 criados nas próprias empresas



93.213 EMPREGOS



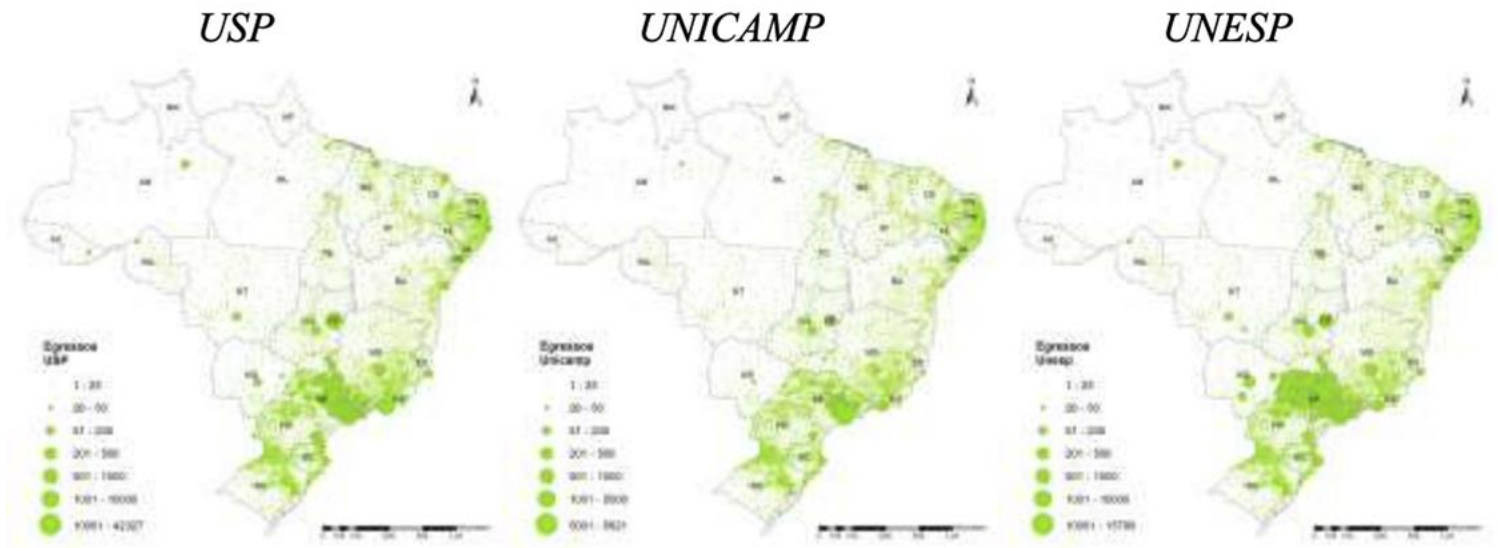
Best practices
Are
São Paulo's state
universities
worth what they
cost?

Azzoni, Vassalo and Haddad took the CPF (social security number) of graduates from state universities, and compared them with a matched cohort who did not study in them. They found that there was a 62% wage differential between the two.

This difference reveals that the universities return more to the local economy than they receive through the tax revenue derived from its graduates.

Available from: https://www.usp.br/nereus/wp-content/uploads/TD_Nereus_10_2020.pdf

Figura 1. Localização dos Egressos das UPPs 2005-2015





Crises of the 2020s

Health crisis < **HDI**

Economic crisis > **Unemployment**

Social crisis > **Inequality**

Political crisis > **Polarisation**

Environmental crisis > **Extreme events**

Geopolitical crisis > **Unpredictability**

Responses for the New Era

Environmental sustainability

SDGs 2030

Digital transition

Competition with cooperation



Changing culture through measurement

Changing the culture through measurement requires a rethink as to **how we approach evaluation in its structure**, as well as the range of information available to decision makers and the general public.

To do this, **stakeholders at all levels of the higher education system must be engaged.**

The first stage will be to identify the significant **restricting and propelling factors for change.**



6. Responsible Evaluation

Moving towards more responsible evaluation, with mechanisms that mix properly contextualised indicators and narrative structures will allow researchers to express the value of their research and activities.





7. Open Science

Brazil's ongoing commitment to open science must be strengthened.

New measures of usage and uptake of open knowledge are need to understand how knowledge is used in practice.

This will include public policy, clinical settings, educational uses, third sector and for industry.



Open science

According to the
Unesco
Recommendation
on Open Science
(2021)

(<https://unesdoc.unesco.org/ark:/48223/pf0000378381.locale=en>)

Open Access is the guarantee that knowledge and results are published in ways that are more widely *accessible to other scientists and to the public.*

Open data is a commitment that the information gathered while making science is measured, as well as the information generated about science, is open for science and the public to access, *to recreate specific experiments as well as to understand the dynamics of science*

Open to society is the commitment to actively *engage all stakeholders in the planning, production, and evaluation of knowledge*



Indicadores de desempenho acadêmico e comparações internacionais

Projeto FAPESP 2019/10963-7

Email: metrics.edu@usp.br

Portal: <https://metrics.usp.br>



Projeto financiado





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