Advanced skill of citation analysis: insight for research visibility and impact

Speaker:
Han-wen Chang

Time	
13:30	Opening: What is advanced bibliometrics, and why does it matter?
13:50	Sharing your experiences
14:00	How to define research visibility and impact?
14:30	Practical: Identifying research impact stories
15:00	What to measure to evaluate visibility and impact?
15:30	Practical: Exploring multiple metrics
16:00	Q&A
16:15	Regroup & Wrap Up at Main Hall

Before

Research, Publish

PUBLISH or PERISH

Now

Research, Publish,
Create, Promote, Measure

VISIBLE or VANISH

https://www.medtextpert.com/research-visibility-or-vanish/

Traditional bibliometrics

- Historical data

- Subject categories

- Quantitative

- Rely on citation databases

Assessing sciences

Advanced bibliometrics

- Current data

- Impacts

- Qualitative

- Multiple sources

Improving sciences

UK

Australia

Hong Kong

REF 2029 Research Excellence Framework

Australian Government — Australian Research Council

ARC

UGC 大學教育資助委員會 University Grants Committee

REF Impact

The Research Excellence Framework (REF) was the first exercise to assess the impact of research outside of academia. Impact was defined as 'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'.

Impact case studies

As part of the 2014 Research Excellence Framework exercise, UK higher education institutions (HEIs) submitted 6,975 impact case studies demonstrating the impact of their research on wider society.

These case studies provide a unique and invaluable source of information on the impact of UK research. UK higher education (HE) research has wide and varied benefits on the economy, society, culture, policy, health, the environment and quality of life — both within the UK and overseas.

Universities engage with a range of public, private and charitable organisations and local communities. Analysis found that these wider impacts and benefits often stem from multidisciplinary work.

Research Impact Principles and Framework

Introduction

The Australian Government recognises the importance of research, science and innovation for increasing productivity and wellbeing to achieve long term economic growth for the Australian community and to enable Australia to engage effectively with current and future national and global challenges. Research is a key contributor to improving Australia's productivity over the longer term.[1]

There is an increasing focus on showcasing or measuring the societal benefits from research, and a need for better coordination in reporting and promoting the impact of these research outcomes. This will become increasingly important in a tight fiscal government environment where returns on investment in research will need to be demonstrated in terms of environmental, economic and social impact. For these reasons and others, key stakeholders including government, industry and the community require more information on the benefits derived from investment in Australian research activities.

Research Impact Fund

What Is It?

The Research Impact Fund (RIF) objectives are:

a. to encourage local academics to consider and articulate the potential of research to deliver benefits to the wider community; and to encourage more impactful and translational research projects; and

b. to encourage a greater volume of collaborative research beyond academia (e.g. with government departments, the business sector, the industry and research institutes).

https://www.ref.ac.uk/

https://www.arc.gov.au/about-arc/strategies/research-impact-principles-and-framework

https://www.ugc.edu.hk/eng/rgc/funding_opport/rif/

Over **50%** of World University Ranking scores are associated with research visibility and impact

THE WORLD UNIVERSITY RANKINGS

- Research reputation (18.0%)
- Research quality (30.0%)
- International co-authorship (2.5%)

QS WORLD UNIVERSITY RANKINGS

- Academia reputation (30.0%)
- Citation per faculty (20.0%)
- International research network (5%)
- Sustainability (5%)

The Times Higher Education Impact Rankings

SUSTAINABLE DEVELOPMENT GOALS

QS World University Rankings: Sustainability

Source: World University Rankings 2024: methodology.QS World University Rankings.

EurekAlert! | AAAS

HOME   NEWS RELEASES   MULTIMEDIA   MEETINGS

NEWS RELEASE 19-FEB-2009

Queen's University Belfast improves Malaysian public health

Business Announcement
QUEEN'S UNIVERSITY BELFAST

Queen's University and University of Malaya (UM) today announced the establishment of the Centre for Population Health in Malaysia.

This is the first Centre of its kind in improving the health of Malaysians.

Examining the communities in terms of their diet and disease, conducting research into the complex relationships between diet, living conditions, environment and health, providing assistance for the national cancer registry and other related research on population health will be among the core functions of the Centre.

The Centre allows Malaysia to have a modern medical database of its people and provides population health solutions in the future. In today's challenging world, research and databases are critical in anticipating future health problems.

Queen's University Vice-Chancellor, Professor Peter Gregson said: "Queen's is honoured to partner the University of Malaya in this major Centre. It is an international partnership that brings together complementary skills from Queen's UK National Centre of Excellence in Public Health and builds on Queen's links with the US National Cancer Institute.

"This initiative will see the development of a world-class Research Centre of Population Health in the University of Malaya. It will also capitalise upon Queen's recognised expertise and experience in Public Health."

Community Engagement

Institutional Branding

Scientific Exchange

Online Awareness

Cross-disciplinary Collaboration

Public Engagement

Research Highlights

Snippets

Scientific Paper/ Patent

Press Releases

Video Abstracts

Graphical Abstracts
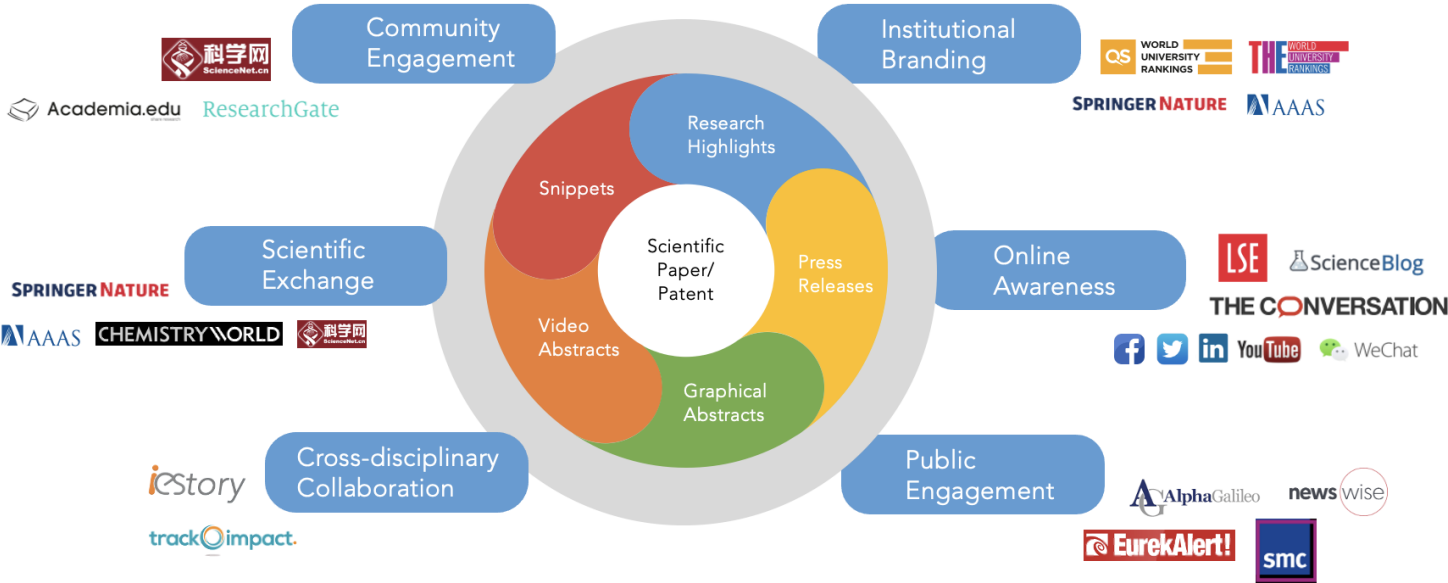
- Increases reach and impact of research

- Enhances academic reputation

- Attracts funding and career opportunities

- Fosters collaboration and networking

ORCiD
Connecting Research and Researchers

ResearchGate is the global platform for researchers

Registered members from over 500 disciplines
25M+

Monthly visits
110M+

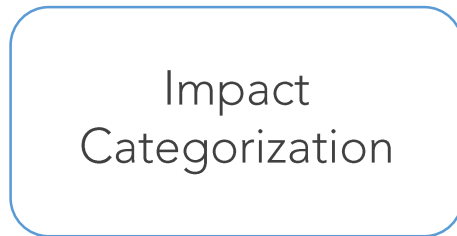Publication page impressions over the past year
3.9B

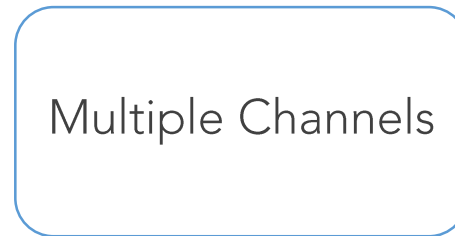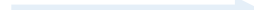Research publications → Curation/Clustering → Different channels → Online outreach

Impact Categorization

☐ UN SDG
☐ Funders (e.g. REF in UK)
☐ Universities

Multiple Channels

☐ Press release
☐ Research community

Intermediary indicators

☐ Altmetrics
☐ Social media analytics
☐ Views/downloads
➕
☐ Citations

Get Research Insights from Advanced bibliometric analysis

Curation/Clustering

Online outreach

Two critical tasks involving analysis to enhance research visibility and impact

Identifying research specialties during curation

Increasing research visibility during outreach

Sharing Session

- How does your institution use research analytics data?

- How does your institution incorporate research visibility and impact into its assessment?

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Intermediary indicators

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❑ Social media analytics
❑ Views/downloads

➕

❑ Citations

Get Research Insights from Advanced bibliometric analysis

An interdisciplinary platform that aligns your findings with Sustainable Development Goals (SDGs) to amplify your research impact. It is a vessel to boost your research visibility.

https://iesresearch.solutions/iestory

REF2014 impact case studies
Research Excellence Framework

Summary Impact Type

Political	(509)
Health	(857)
Technological	(1397)
Economic	(381)
Legal	(212)
Cultural	(1099)
Societal	(1723)
Environmental	(459)

https://webarchive.nationalarchives.gov.uk/ukgwa/20180903113600/http:/impact.ref.ac.uk/CaseStudies/

Natural Sciences and Engineering Research Council of Canada

Forms of contributions to research

NSERC values all forms of contributions to NSE research, including but not limited to the following (listed alphabetically):

- Advances to equity, diversity, inclusion and accessibility in the research ecosystem
- Co-creation or transfer of products, technology, processes, services or advice useful to specific organizations (in the private, public or non-profit sectors), communities or society
- Communication of research results and knowledge translation to specialist or non-specialist audiences, including the public (e.g., magazine/newspaper articles, media interviews, blog posts, social media publications or public lectures)
- Community service that leverages expertise, such as membership on scientific or advisory committees, or journal editorships
- Contributions to policies, guidelines, regulations, laws, standards and/or practice
- Creation, curation, sharing or reuse of datasets
- Creation, direction, facilitation and/or strengthening of partnerships or collaborations in the Canadian or international research community, or with other communities, including through research networks, large collaborative projects or community-engaged research/citizen science
- Creation of companies or organizations that promote research or the use of research results
- Development of tools, including software, for use by researchers or by others in the public or private domain
- Intellectual property: including patents, copyrights, trademarks or trade secrets
- Publications: including articles, communications, pre-prints, monographs, memoirs or special papers, review articles, conference/symposia/workshop proceedings, posters and abstracts, government publications, and reports documenting industrial contributions or contributions to engineering practice
- Support for traditional knowledge or Indigenous ways of knowing, including cultural practices, in the NSE context
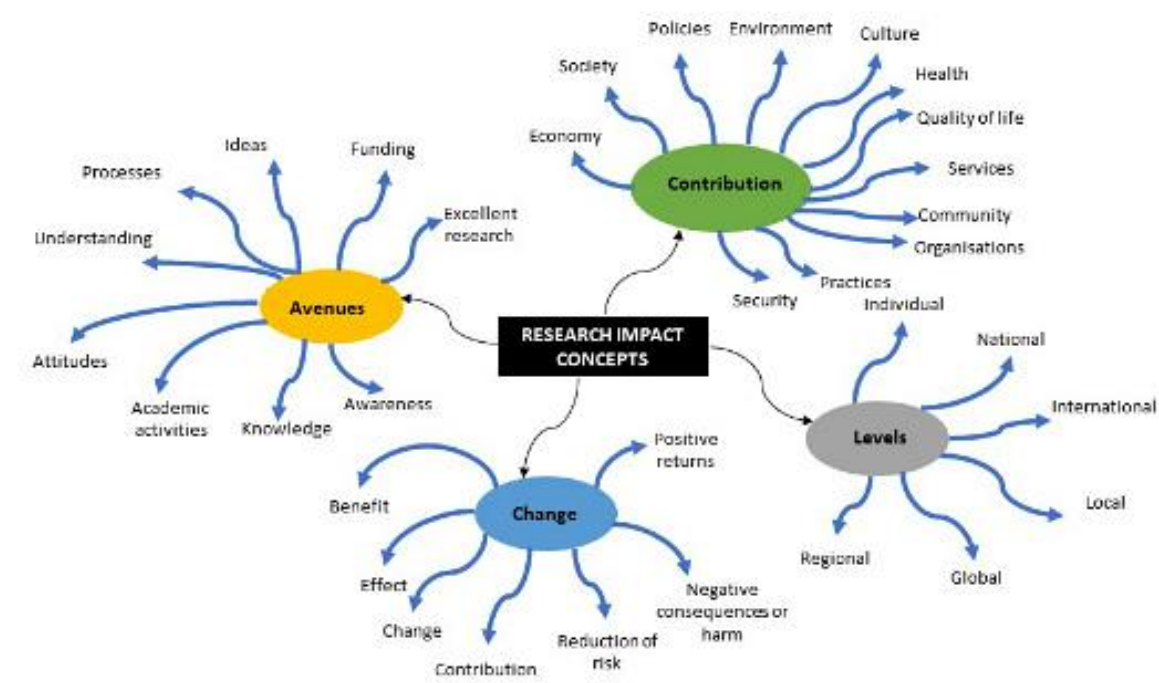
Australian Government
Australian Research Council

Research Impact Pathway

Inputs	Activities	Outputs	Outcomes	Benefits
- Research income - Staff - Background IP - Infrastructure - Collections	- Research Work and Training - Workshop/Conference Organising - Facility Use - Membership of Learned Societies and Academies - Community and Stakeholder Engagement	- Publications including E-Publications - Additions to National Collections - New IP: Patents and Inventions - Policy Briefings - Media	- Commercial Products, Licences and Revenue - New Companies – Spin offs, Start Ups or Joint Ventures - Job Creation - Implementation of Programs and Policy - Citations - Integration into Policy	- Economic, Health, Social, Cultural, Environmental, National Security, Quality of Life, Public Policy or Services - Higher Quality Workforce - Job Creation - Risk Reduction in Decision Making

https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/assessment_of_contributions-evaluation_des_contributions_eng.asp#3

https://www.arc.gov.au/sites/default/files/media-assets/policy_research_impact_pathway_table.pdf

Library's guides
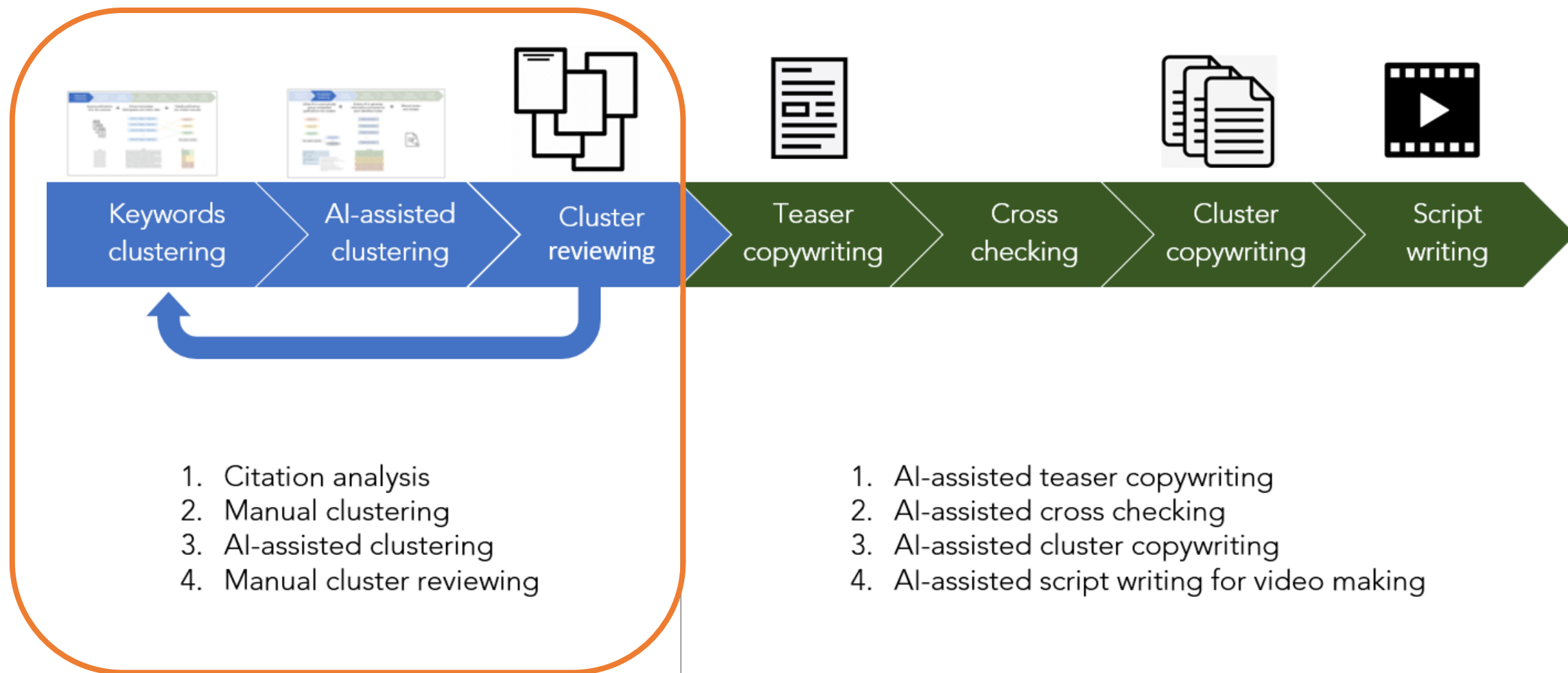University of the Sunshine Coast
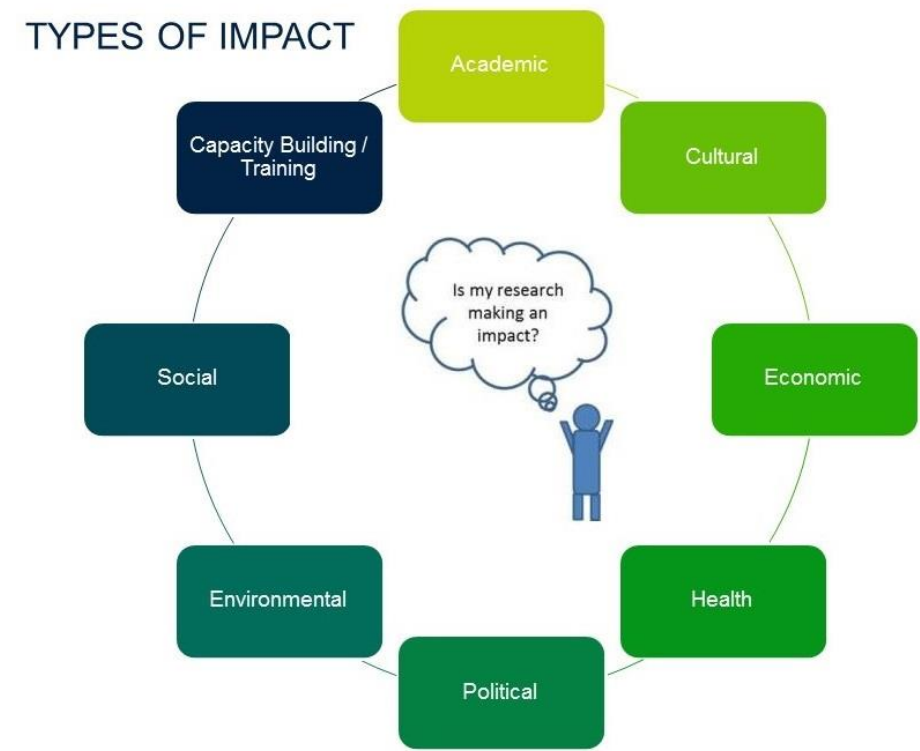
Library's guides
The University of Melbourne

Source: Withyman C. (2018) Planning for Impact: Researcher Toolkit, Research Division, CQUniversity Australia.
(Retrieved from https://libguides.usc.edu.au/c.php?g=925431&p=6683913)

Source: Core elements and concepts that underpin research impact definitions (Source: LSE Impact Blog).
(Retrieved from https://blogs.unimelb.edu.au/researcher-library/2018/01/09/defining-research-impact/)

Curation of multiple articles into Impact Story

Sample of Multidisciplinary Cluster Page

Keywords clustering → **AI-assisted clustering** → **Cluster reviewing** → **Teaser copywriting** → **Cross checking** → **Cluster copywriting** → **Script writing**

1. Citation analysis
2. Manual clustering
3. AI-assisted clustering
4. Manual cluster reviewing

1. AI-assisted teaser copywriting
2. AI-assisted cross checking
3. AI-assisted cluster copywriting
4. AI-assisted script writing for video making

| Keywords clustering | AI-assisted clustering | Cluster reviewing | Teaser copywriting | Cross checking | Cluster copywriting | Script writing |

Acquire publications from the customer → Extract and analyze bibliography and citation data → Classify publications into clusters manually

PUBLICATIONS
PUBLICATIONS
PUBLICATIONS

Article 1: Subject + Keywords
Article 2: Subject + Keywords
Article 3: Subject + Keywords
...
Article N: Subject + Keywords

Cluster #1
Cluster #2
Cluster #3

Be unable to decide

| Keywords clustering | AI-assisted clustering | Cluster reviewing | Teaser copywriting | Cross checking | Cluster copywriting | Script writing |

Utilize AI to automatically group unclassified publications into clusters

Employ AI to generate informative summaries for each identified cluster

Manual review and validate

Cluster #1

Cluster #2

Cluster #3

Cluster #4

Be unable to decide

...

Cluster #P

Cluster summary 1

Cluster summary 2

Cluster summary 3

...

Cluster summary P

Article Title	Data-driven Cluster	Reading Notes	Proposed Cluster
Polarity-Tuning Derivatization-LC-MS Approach for Probing Global Carboxyl-Containing Metabolites in Colorectal Cancer	LC-MS approach Metabolomics	Gastrointestinal health Biomarker synthesis/derivation Highlight technique/method	LC-MS approach Metabolomics - Derivation
Discovery of the bioactive peptides secreted by Bifidobacterium using integrated MCX coupled with LC–MS and feature-based molecular networking	LC-MS approach	Probiotics Gastrointerstinal health Novel discovery Highlight technique/method	Nutraceuticals Discovery LC-MS approach
Microbiota drive insoluble polysaccharides utilization via microbiome-metabolome interplay during Pu-erh tea fermentation	Natural compound Metabolomics	Functional food Compound characterization	Nutraceuticals Metabolomics - Characterization
Structural characterization, molecular dynamic simulation, and conformational visualization of a water-soluble glucan with high molecular weight from Gastrodia elata Blume	Natural compound	Functional food Compound characterization	Nutraceuticals Characterization
Dual roles of drug or its metabolite-protein conjugate: Cutting-edge strategy of drug discovery using shotgun proteomics		Review Drug discovery/characterization Highlight technique/method	Metabolomics - Characterization Drug discovery
Aroma correlation assisted volatilome coupled network analysis strat⋯ main aroma-active volatiles of Rosa roxburghii	d	Functional food Compound characterization Flavonoid-centric	Nutraceuticals Characterization
Isolation, Bioactivity, and Molecular Docking of a Rare Gastrodin Isocitrate and Diverse Parishin Derivatives from Gastrodia elata Blume	Natural compound	Neutroprotective effects Compound characterization technique/method Novel discovery	Nutraceuticals Discovery Characterization
Dynamic changes of phenolic acids and antioxidant activity of Citri Reticulatae Pericarpium during aging processes	Natural compound LC-MS approach	Functional food Characterization/validation	Nutraceuticals LC-MS approach Characterization
Polarity-extended composition profiling via LC-MS-based metabolomics approaches: A key to functional investigation of Citrus aurantium L	Natural compound LC-MS approach Metabolomics	Functional food Compound characterization	Nutraceuticals LC-MS approach Metabolomics - Characterization
Carboxyl-containing components delineation via feature-based molecular networking: A key to processing conditions of fermented soybean	Natural compound	Functional food Highlight characterization technique/method	Nutraceuticals Characterization

- LC-MS in nutraceuticals

The advancements in nutraceuticals and functional foods leading to enhanced cancer diagnosis

- Bioactive peptide discovery

Discovery of bioactive peptides with improved antioxidant activity

- Traditional and modern integration

Integration of traditional Chinese medicine in the nutraceutical context

Main research area - Astromycology:

- Simões, M. F., Cortesão, M., Azua-Bustos, A., Bai, F. Y., Canini, F., Casadevall, A., ... & Antunes, A. (2023). The relevance of fungi in astrobiology research–Astromycology. Mycosphere, 14(1), 1190-1253.

Researching the relevance and impact of microbes in astrobiology and under the space exploration context:

- Simões, M. F., Ottoni, C. A., & Antunes, A. (2020). Biogenic metal nanoparticle approach to detect life on mars?. Life, 10(3), 28.

- DasSarma, P., Antunes, A., Simões, M. F., & DasSarma, S. (2020). Earth's stratosphere and microbial life. Current issues in molecular biology, 38(1), 197-244.

- Simões, M. F., & Antunes, A. (2021). Microbial Pathogenicity in Space. Pathogens 2021, 10, 450.

- Wu, J. H., McGenity, T. J., Rettberg, P., Simões, M. F., Li, W. J., & Antunes, A. (2022). The archaeal class Halobacteria and astrobiology: Knowledge gaps and research opportunities. Frontiers in Microbiology, 13, 1023625.

- Méndez, A., Rivera-Valentín, E. G., Schulze-Makuch, D., Filiberto, J., Ramírez, R. M., Wood, T. E., ... Simões, M. F., ... & Haqq-Misra, J. (2021). Habitability models for astrobiology. Astrobiology, 21(8), 1017-1027.

Microbial research processes directly transferable for space biotechnology applications (e.g., metal nanoparticles and biominerals):

- Zhang, J., Deng, J., He, Y., Wu, J., Simões, M. F., Liu, B., ... & Antunes, A. (2024). A review of biomineralization in healing concrete: Mechanism, biodiversity, and application. Science of The Total Environment, 170445.

- Aguiar, A. P., Ottoni, C. A., Aquaroli, C. D. L. R., Mendes, E. C. V., de Souza Araújo, A. L., Simões, M. F., & Barbieri, E. (2024). Mycogenic silver nanoparticles from *Penicillium citrinum* IB-CLP11–their antimicrobial activity and potential toxicity effects on freshwater organisms. Environmental Science: Nano.

- mões, M. F. (2023). Mycosynthesis of titanium dioxide (TiO₂) nanoparticles and their applications. In Fungal Cell Factories for Sustainable Nanomaterials Productions and Agricultural Applications (pp. 225-255). Elsevier.

- da Silva, C. A., Ribeiro, B. M., do Valle Trotta, C., Perina, F. C., Martins, R., de Souza Abessa, D. M., ... Simões, M. F. & Ottoni, C. A. (2022). Effects of mycogenic silver nanoparticles on organisms of different trophic levels. Chemosphere, 308, 136540.

EXAMPLE
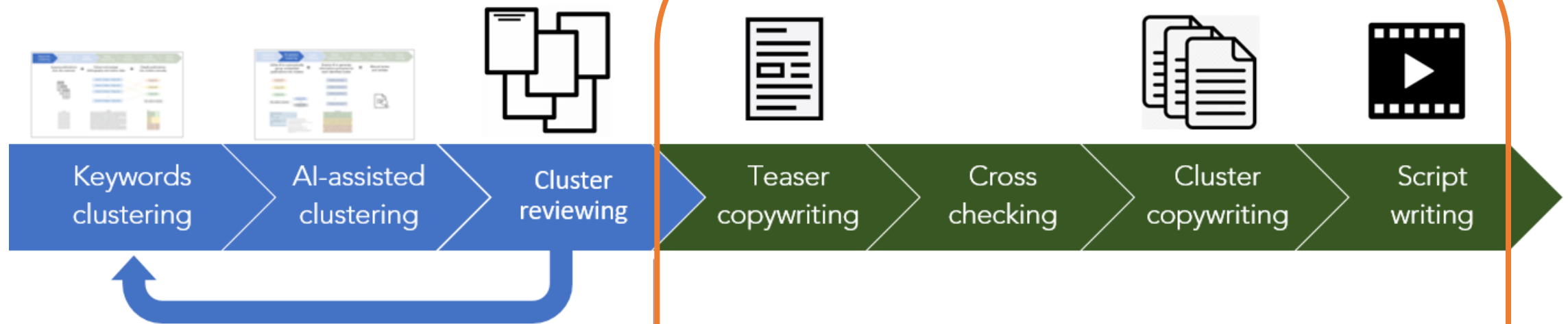
Copywriting

Keywords clustering → AI-assisted clustering → Cluster reviewing → Teaser copywriting → Cross checking → Cluster copywriting → Script writing

1. Citation analysis
2. Manual clustering
3. AI-assisted clustering
4. Manual cluster reviewing

1. AI-assisted teaser copywriting
2. AI-assisted cross checking
3. AI-assisted cluster copywriting
4. AI-assisted script writing for video making

assistant by **scite**

Product ⌄   Solutions ⌄   Blog   🔔 5   ⌄ 👤

Ask, Discover, Trust

scite Assistant gives you answers with insight and
control into its thought process.

Ask a question... (type '/' for menu)   ➤

⚙ Settings   ⊕ Sources

How does the structure of a protein affect its function?   →

What are the cognitive and neural mechanisms underlying decision-making and risk-taking behavior?   →

How many rats live in NYC?   →

What is carbon dioxide?   →

The studies provided can be clustered into two main topics:

1. **Astrobiology and Extraterrestrial Life Detection**:
- The relevance of fungi in astrobiology research–Astromycology
- Biogenic Metal Nanoparticles: A New Approach to Detect Life on Mars?
- Earth's Stratosphere
- Habitability Models
- Microbial Pathogenic
- The archaeal class H
gaps and research op
- A review of biominer
biodiversity, and appli
- Mycogenic silver nar
CLP11–their antimicro
on freshwater organis
- Mycosynthesis of tit
their applications
- Effects of mycogenic
different trophic level

2. **Nanoparticles and Antimicrobial Applications**:
- Mycogenic silver nanoparticles from Penicillium citrinum IB-CLP11–their antimicrobial activity and potential toxicity effects on freshwater organisms
- Mycosynthesis of titanium dioxide (TiO2) nanoparticles and their applications
- Effects of mycogenic silver nanoparticles on organisms of different trophic levels
- Biogenic Metal Nanoparticles: A New Approach to Detect Life on Mars?

These clusters highlight the intersection between astrobiology, particularly the search for life beyond Earth, and the use of nanoparticles, especially silver and titanium dioxide nanoparticles, for antimicrobial applications and potential life detection on Mars. The studies collectively contribute to advancing our understanding of astrobiological concepts and the development of innovative approaches for detecting and combating microbial life in various environments.

Research Highlights:

The studies on the relevance of fungi in astrobiology research–Astromycology, Earth's Stratosphere and Microbial Life, Habitability Models for Astrobiology, Microbial Pathogenicity in Space, The archaeal class Halobacteria and astrobiology, and A review of biomineralization in healing concrete collectively contribute to advancing our understanding of microbial life in various environments. These reviews explore the role of fungi in astrobiological contexts, the presence of microbial life in Earth's stratosphere, the development of models to assess habitability for astrobiological studies, and the implications of microbial pathogenicity in space exploration. Additionally, the overview of Halobacteria sheds light on knowledge gaps and research opportunities in astrobiology, while the review on biomineralization in healing concrete highlights the mechanisms, biodiversity, and applications of biomineralization processes. Together, these studies provide valuable insights into the diverse microbial ecosystems on Earth and their relevance to astrobiological research, emphasizing the importance of interdisciplinary approaches to understanding microbial life in different environments.

Assisting with research clustering

Assisting with research highlights

- [x] Intro — 224
- [x] Methods — 5
- [x] Results — 13
- [x] Discussion — 29
- [x] Other sections — 490

Paper Section:
Introduction

"...Its spatial and temporal distribution therefore fundamentally impacts weather and climate through a variety of processes, such as exchange of latent heat, radiative cooling and heating, cloud formation and precipitation. Lower tropospheric water vapour ampli®es the predicted global warming due to CO_2 doubling **(Manabe and Wetherald, 1967)** with a climate sensitivity factor of about 1.6 (IPCC, 1990). The role of upper tropospheric humidity (UTH) in the climate system is much less clear...."

⊘ supporting (Confidence: 80%) flag classification

A distribution law for relative humidity in the upper troposphere and lower stratosphere derived from three years of MOZAIC measurements
Gierens, Schumann, Helten et al. 1999
Ann. Geophys.

Paper Section:
Methods

"...Previous studies using similar models have tended to assume fully saturated atmospheres, which may yield atmospheres that are too moist for this study. For consistency, we chose a subsaturated Manabe-Wetherald relative humidity (RH) profile (Manabe & Wetherald, **[ref]**), which is a similar base assumption made by current early Mars GCMs (e.g., Forget et al, [ref]; Wordsworth et al, [ref]). We adopted a Manabe-Wetherald profile over other common subsaturated profiles (tropospheric RH = 50%) because it treats variations of RH with height more realistically, impacting tropospheric distributions of water vapor and precipitation (Figure)...."

⊘ mentioning (Confidence: 99%) flag classification

Climate Simulations of Early Mars With Estimated Precipitation, Runoff, and Erosion Rates
Ramirez, Craddock, Usui 2020
J. Geophys. Res. Planets

Paper Section:
Results

"...The roughly 70% enhancement in sensitivity for (11) versus (10) is, in fact, consistent with the early radiative-convective model study by **Manabe and Wetheraid [1967]** and many others since. In that investigation the enhancement was due to water-vapor feedback; i.e., as the climate warms the atmosphere contains more water vapor and that amplifies the warming, since water vapor is itself a greenhouse gas...."

⊘ mentioning (Confidence: 99%) flag classification

Intercomparison and interpretation of climate feedback processes in 19 atmospheric general circulation models
Cess, Potter, Blanchet et al. 1990
J. Geophys. Res.
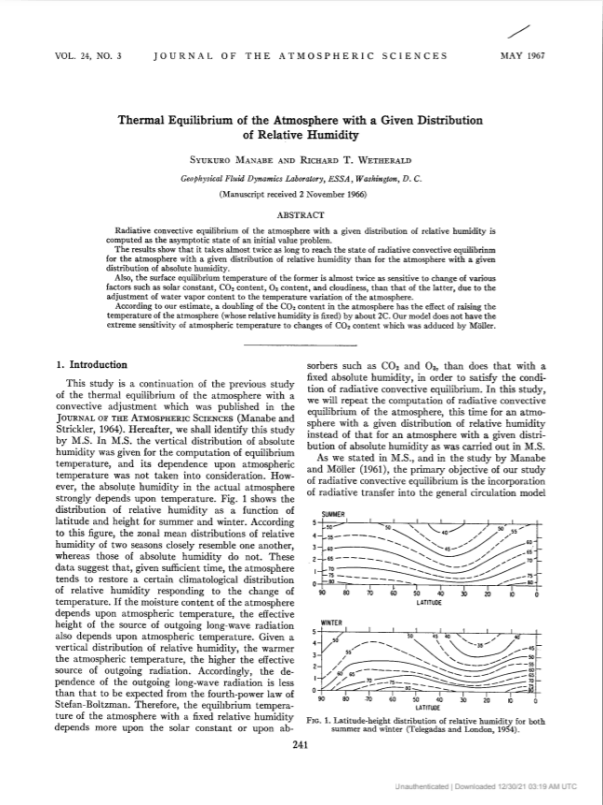
Thermal Equilibrium of the Atmosphere with a Given Distribution of Relative Humidity

Syukuro Manabe[1], Richard T. Wetherald[2] 1967

J. Atmos. Sci. volume 24, issue 3, P241-259

1,202 | 39 | 751 | 4

Number of citing publications
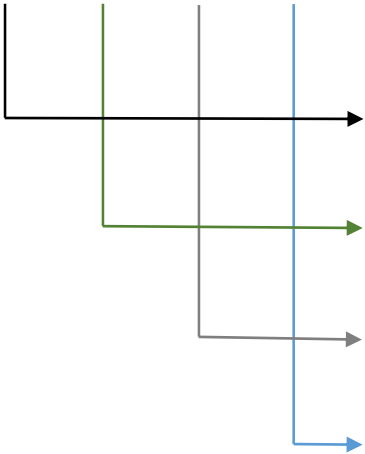
Supporting citation statements

Mentioning citation statements

Contrasting citation statements

ELSEVIER

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Scopus AI: Trusted content. Powered by responsible AI.

Scopus AI is an intuitive and intelligent search tool powered by generative AI (GenAI) that enhances your understanding and enriches your insights with unprecedented speed and clarity.

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is a fully realiz
your trusted g
knowledge fo
multidisciplin

Expanded summary

Foundational papers

1,635 Citations

250 Citations

192 Citations

Get to the heart of any subject

Foundational papers

Topic Experts

2233 citations   10 matching documents   32 h-index

661 citations   5 matching documents   17 h-index

Find the key players

What would you like to learn more about?
Influence of seismology on civil engineering designs

Influence of seismology on civil engineering designs

Summary

References

1

2

Show all references

Show concept map

Topic summaries

A more complete picture

https://www.elsevier.com/products/scopus/scopus-ai
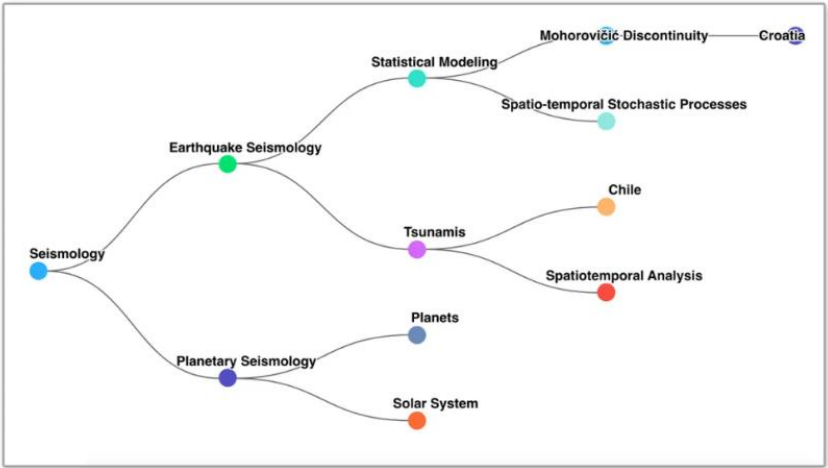
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💬 What is the role of the mitochrondrial fusion in cancer progression?
Today

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NG What is the role of the mitochrondrial fusion in cancer progression?

▶ In triple-negative breast cancer (TNBC), mitochondrial fission inhibits cellular processes and signaling pathways associated with cancer progression and metastasis.
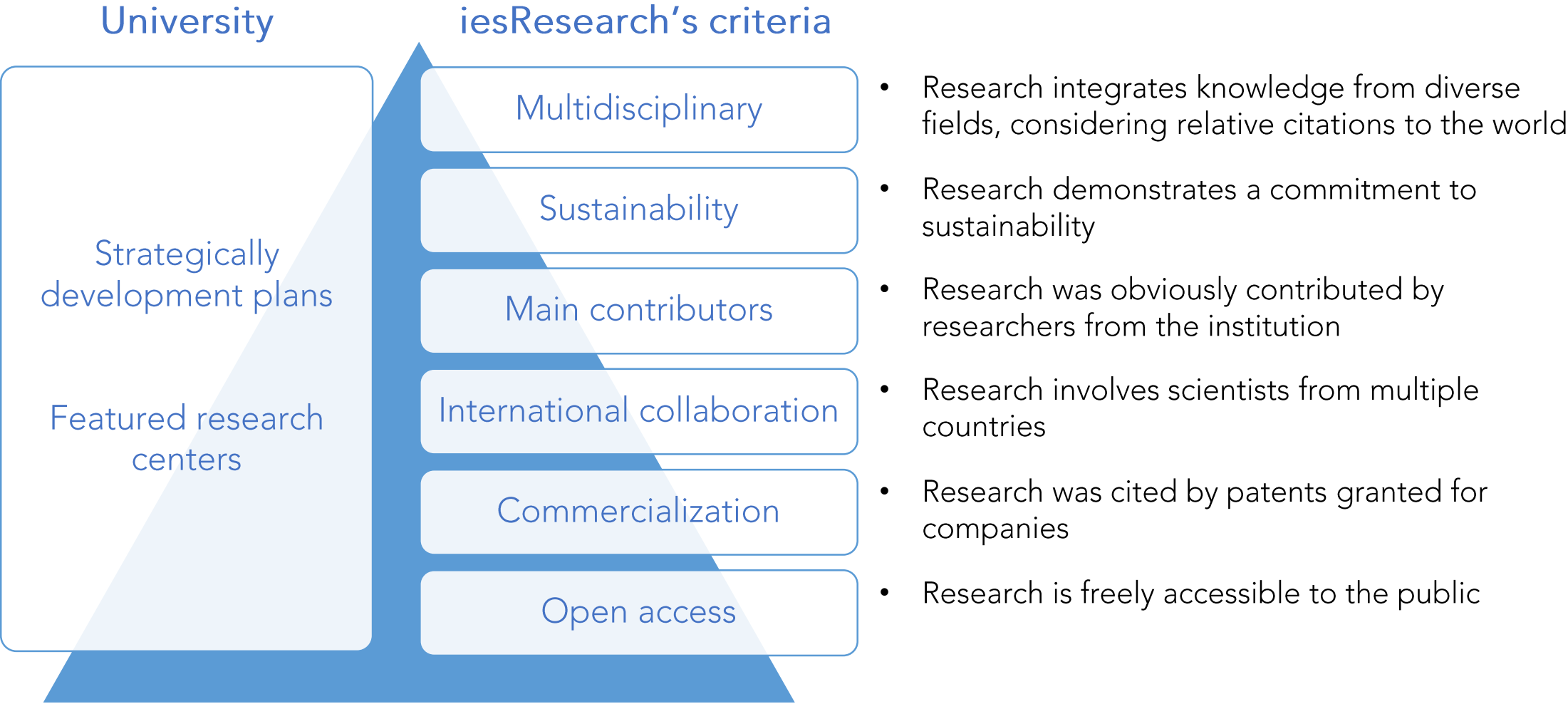
View 5 referenced documents ⌄

Summary of referenced documents:
Mitochondrial fusion plays a crucial role in maintaining genomic stability and physiological functions of mitochondria. It is challenging to quantitatively measure the direct roles of mitochondrial fusion in apoptosis and cancer progression. However, a high-throughput in vitro method has been developed to quantify mitochondrial fusion, which revealed the interplay between mitochondrial fusion and apoptosis. Disruption of mitochondrial fusion could be a potent strategy for cancer therapy [1]. Mitochondrial fusion and fission are required for proper mitochondrial function and cell proliferation. Defects in mitochondrial fusion or fission reduce mitochondrial membrane potential and compromise mitochondrial respiration, while the absence of both fusion and fission restores normal function [2]. Alterations in mitochondrial dynamics, including fusion and fission, are implicated in kidney injury and the progression of kidney diseases. Disruption of mitochondrial fusion promotes fission-induced mitochondrial fragmentation, while a reduction in fission produces excessive mitochondrial elongation [3]. Mitochondrial stress response, closely linked to mitochondrial function, contributes to cancer progression. Targeting the mitochondrial stress response could be a potential anti-cancer therapeutic strategy [4]. Enhanced mitochondrial fission is positively regulated by activating oncogenic mutations and is linked to colorectal cancer progression. Targeting mitochondrial dynamics could be a potential therapeutic approach for colorectal cancer [5].

Did this response meet your expectations? 👍 👎

Identify your specialties for research outreach

University

iesResearch's criteria

Strategically development plans

Featured research centers

Multidisciplinary

Sustainability

Main contributors

International collaboration

Commercialization

Open access

- Research integrates knowledge from diverse fields, considering relative citations to the world

- Research demonstrates a commitment to sustainability

- Research was obviously contributed by researchers from the institution

- Research involves scientists from multiple countries

- Research was cited by patents granted for companies

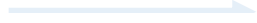- Research is freely accessible to the public

Practical:

- How do you like to categorize research impact across different disciplines? Use one example to identify impact.

- What challenges do you face in categorizing research impact in multidisciplinary studies?
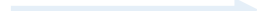
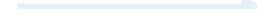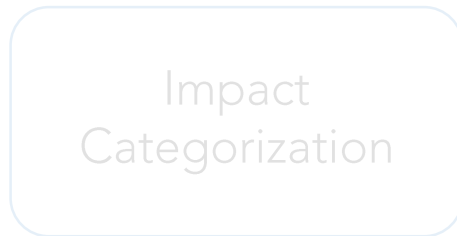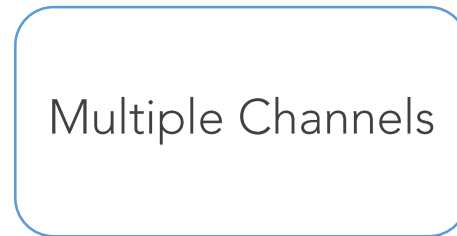| Time	
13:30	Opening & Why research visibility and impact matter?
13:50	Group discussion
14:00	How to define research visibility and impact?
14:30	Practical: Identifying research impact stories
15:00	What to measure to evaluate visibility and impact?
15:30	Practical: Exploring multiple metrics
16:00	Q&A
16:15	Regroup & Wrap Up at Main Hall

Research publications → Curation/Clustering → Different channels → Online outreach

Impact Categorization

❑ UN SDG
❑ Funders (e.g. REF in UK)
❑ Universities

Multiple Channels

❑ Press release
❑ Research community

Intermediary indicators

❑ Altmetrics
❑ Social media analytics
❑ Views/downloads

➕

❑ Citations

Get Research Insights from Advanced bibliometric analysis

Multiple Channels for Research Outreach

Citation data supports strategic research outreach

Leverage your current network to expand into wider communities

Opportunity

Opportunity

SAMPLE

Mahidol University has collaborated with researchers worldwide, primarily with the power houses in research. To broaden its network, it could leverage the citation network and build strong partnership with those citing countries, particularly in Europe and Africa.

Top 20 countries internationally co-authored with Mahidol University (totally 84 countries)

- United States (231)
- United Kingdom (107)
- Canada (49)
- Japan (49)
- Australia (48)
- Italy (44)
- Taiwan (36)
- China (33)
- Germany (33)
- Indonesia (33)

- South Korea (33)
- Netherlands (32)
- Malaysia (27)
- India (21)
- Switzerland ((20)
- Singapore (19)
- France (16)
- Hong Kong (14)
- Pakistan (14)
- South Africa (14)

Top 20 countries outside Thailand citing Machidol University (totally 88 countries)

- United States (947)
- China (485)
- United Kingdom (334)
- Italy (237)
- Canada (206)
- Australia (181)
- Germany (138)
- Japan (126)
- France (123)
- Netherlands (92)

- Spain (82)
- Brazil (81)
- South Korea (74)
- Switzerland (70)
- Belgium (62)
- Sweden (62)
- Taiwan (56)
- Greece (49)
- Iran (46)
- India (42)

Source: Lens.org, 2021-2023. Mahidol University's 871 publications have been cited 4,411 times by 4,199 articles (Retrieved on Nov 15, 2023)

Research Topic	Ads Targeting Country
Targeting glycosylated PD-1 induces potent anti-tumor immunity	Spain > UK > Taiwan>India>UK> Taiwan>Brazil
The gluconeogenic enzyme PCK1 phosphorylates INSIG1/2 for lipogenesis	Sweeden > UK > Taiwan>UK>India>Brazil
The Making of a Flight Feather: Bio-architectural Principles and Adaptation	Germany > UK > Taiwan>Brazil>UK>Taiwan>Brazil
Fine particulate matter exposure during pregnancy and infancy and incident asthma	India > Germany>UK>Taiwan>UK> Taiwan>India
Genetic Architecture Associated With Familial Short Stature	Brazil > Germany>UK>Taiwan>UK>India> UK
Melatonin attenuates TNF-α and IL-1β expression in synovial fibroblasts and diminishes cartilage degradation: Implications for the treatment of rheumatoid arthritis	Japan > UK>India>Taiwan>UK>India> Spain
Methylation and PTEN activation in dental pulp mesenchymal stem cells promotes osteogenesis and reduces oncogenesis	Brazil > UK>Italy>Taiwan>UK>Taiwan>India
Glutathione peroxidase 8 negatively regulates caspase-4/11 to protect against colitis	UK > Brazil>France>Taiwan>UK>US>Taiwan
Real-World Database Examining the Association Between Avascular Necrosis of the Femoral Head and Diabetes in Taiwan	US > India>UK>Taiwan>UK>Brazil>India
HLA-B27–mediated activation of TNAP phosphatase promotes pathogenic syndesmophyte formation in ankylosing spondylitis	Italy > Germany>India>Taiwan>UK>Brazil>India
International Society for Nutritional Psychiatry Research Practice Guidelines for Omega-3 Fatty Acids in the Treatment of Major Depressive Disorder	US > Brazil>UK>Taiwan>UK>India>Taiwan
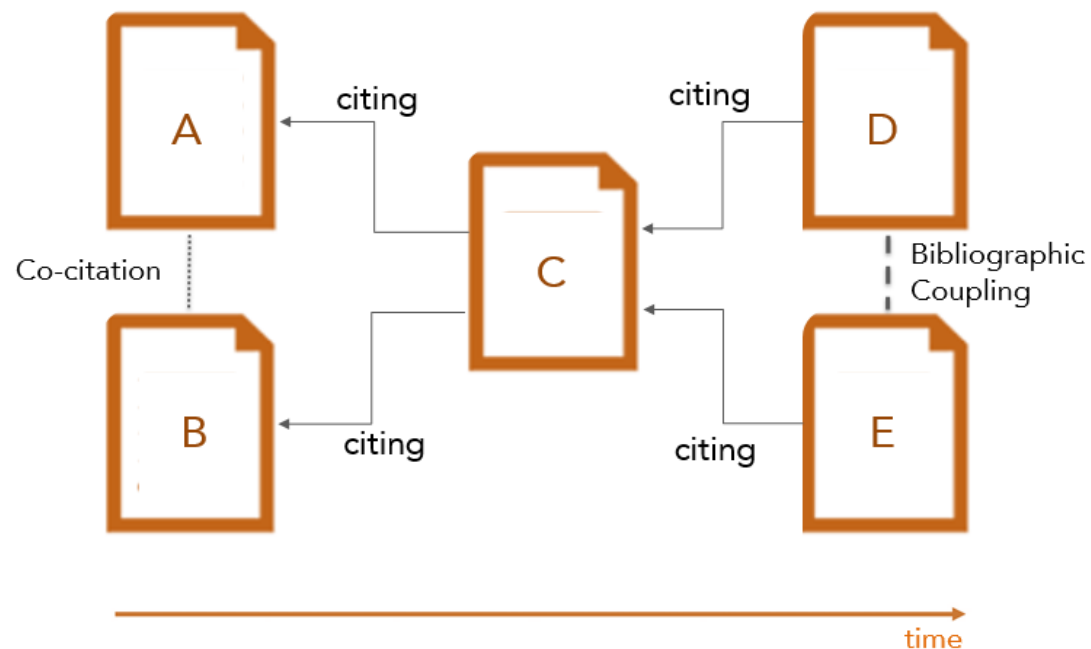
Web of Science

InCites (Analytics tool using Web of Science data)

Google Scholar

Dimensions (free access module + analytics subscription)

LENS.ORG
Solving The Problem Of Problem Solving ™

Scopus
SciVal (Analytics tool using Scopus)

scite_
(free access module + subscription)

Publication count
- Number of papers

- Number of highly cited paper
- h-index

Citation count
- Number of citations
- Citation Percentiles
- Field-normalized metric
  - Field-Weighted Citation Impact (FWCI)
  - Relative Citation Ratio (RCR)
  - Field Citation Ratio (FCR)

Altmetrics
- Measurement by usage, captures, mentions, shares, etc.
- Publications with attention (%)
- Altmetric Attention Score

Measure research visibility and impact

Citation metrics

Researchers

- Discover related research
- Show research profile
- Find potential partners for research collaboration

Institutions

- Benchmark with peers
- Develop university branding strategy

Funding agency

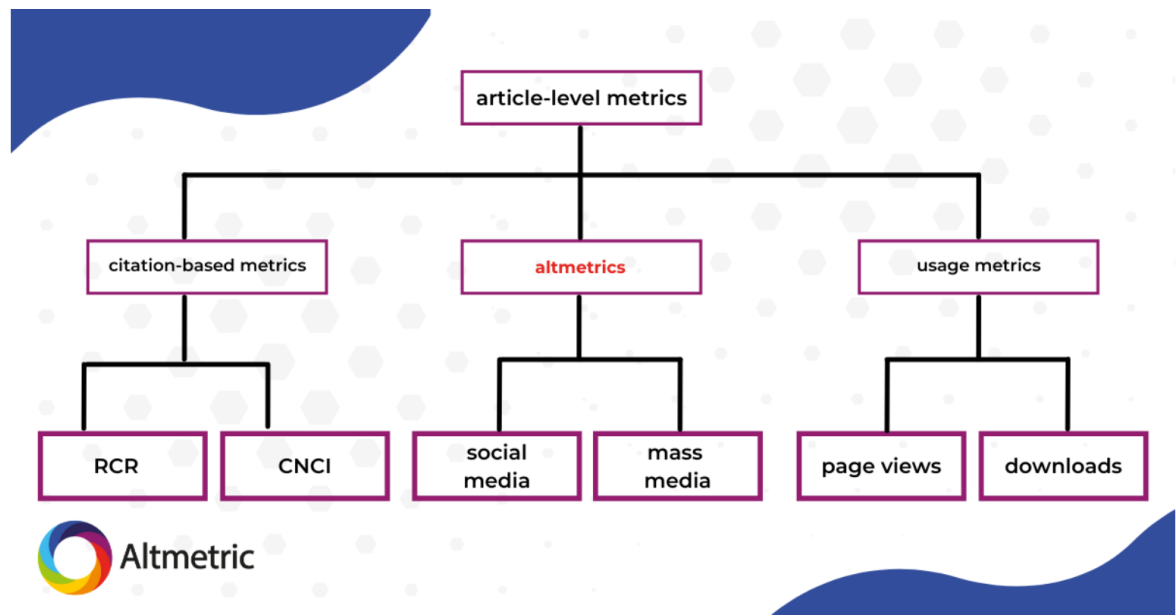- Improve evidence-based planning
- Measure citation impact

Publishers

- Analyze the popularity of journals
- Refine publishing strategy

Corporate (R&D)

- Find key research groups
- Provide competitive insights
- Identify emerging trends/topics

Altmetric

article-level metrics
- citation-based metrics
  - RCR
  - CNCI
- altmetrics
  - social media
  - mass media
- usage metrics
  - page views
  - downloads

PLUMX Metrics Categories

CITATIONS
(citation indexes, patent citations, policy citations, clinical citations)

USAGE
(clicks, downloads, views, library holdings, video plays)

CAPTURES
(bookmarks, favorites, Reference manager saves, watchers)

MENTIONS
(blog posts, news articles, comments, reviews, Wikipedia links)

SOCIAL MEDIA
(likes, shares, tweets)

1475

Altmetric score (what's this?)
Tweeted by 1746
On 52 Facebook pages
Mentioned in 19 Google+ posts
Picked up by 18 news outlets
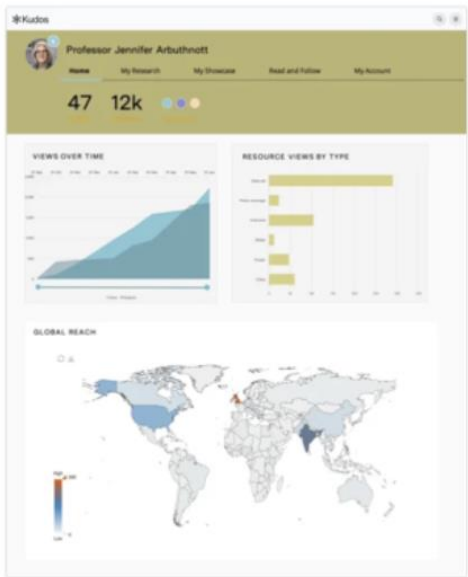Blogged by 25

PLUMX

Usage
PDF Views: 1052
HTML Views: 7006

Captures
Readers: 34

Mentions
Comments: 11

Social Media
Tweets: 63
+1s: 2
Likes: 20
Shares: 13

Citations
CrossRef: 1

see details
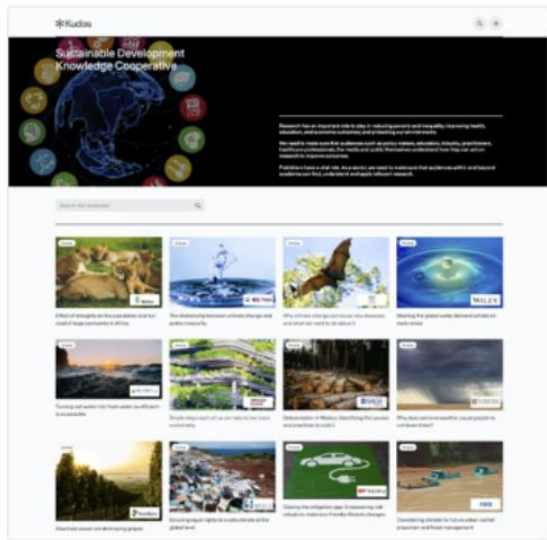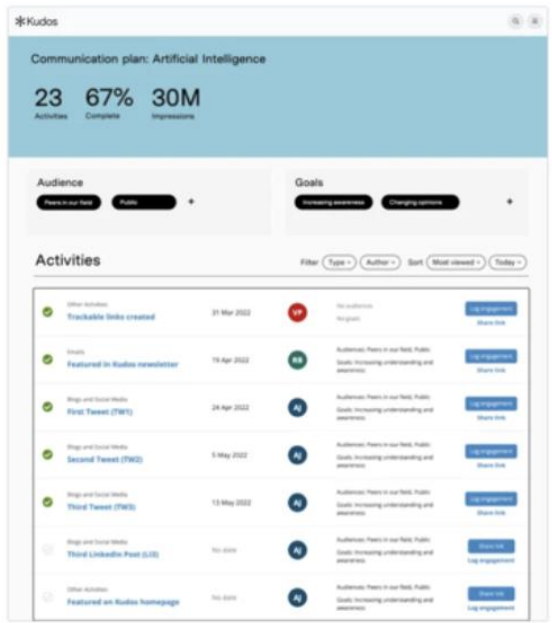
Showcasing research excellence

Growing citations and broader impacts

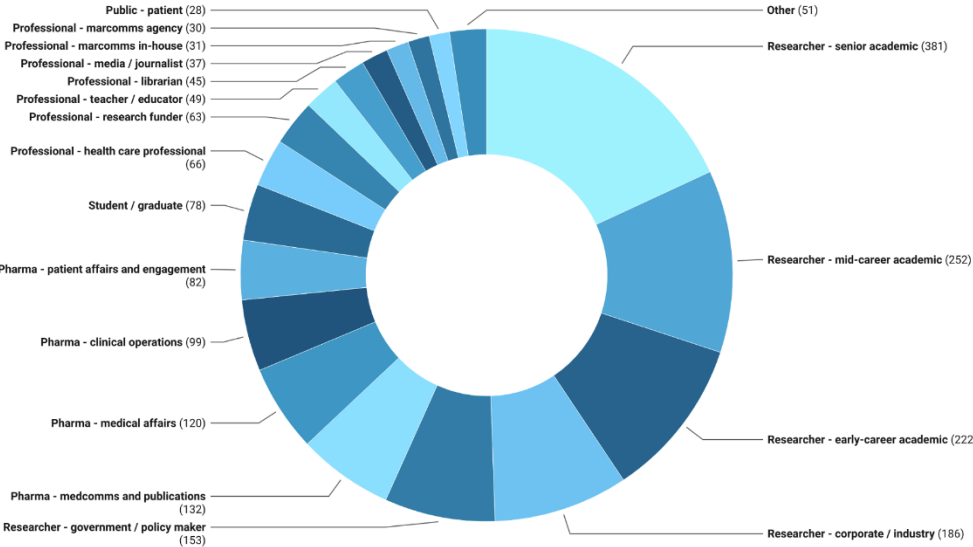Tracking impact as it develops

Monthly visibility data

Measure research visibility and impact
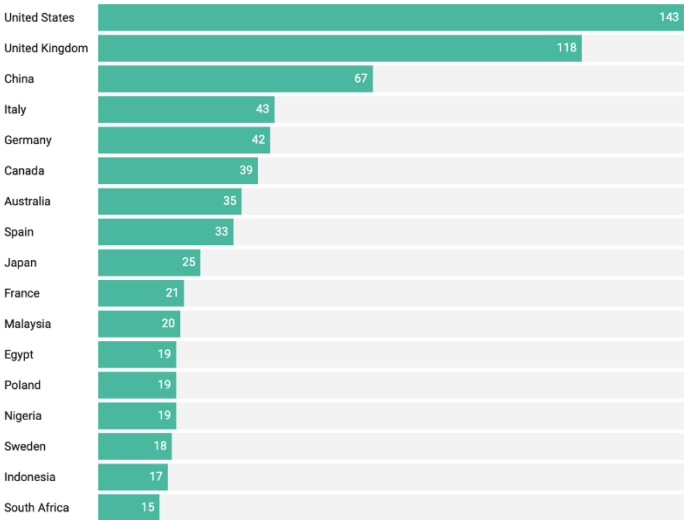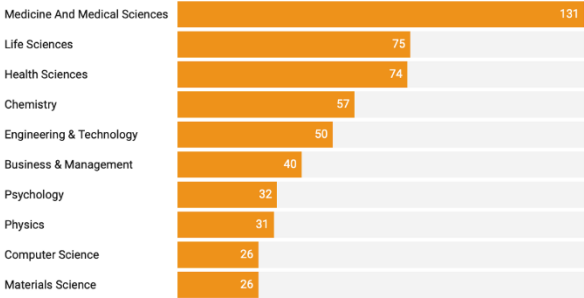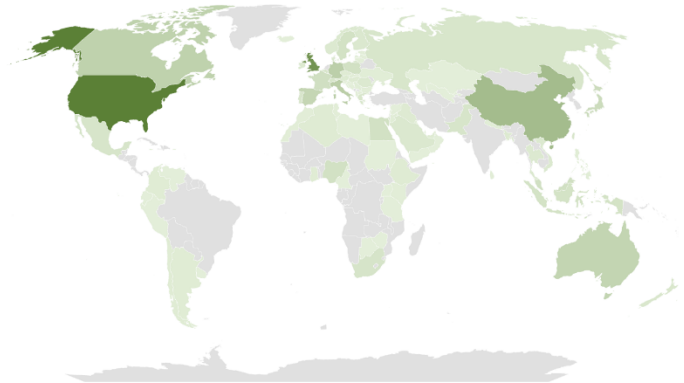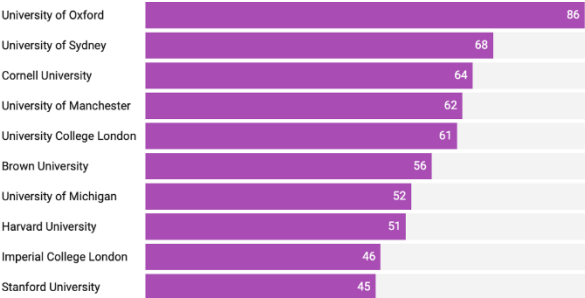
The REF impact case study database

Maps of impact case studies

https://www.ref.ac.uk/

Mash up various metrics

- Publications
- Patents
- Dataset
- Grants
- Clinical trials
- Policy documents

- Field of research
- MeSH heading
- Health category
- Cancer type
- Research Activity Codes (HRCS)
- Sustainable Development Goals (SDG)

- Views
- Usage
- Captures
- Mentions
- Downloads
- Social Media
- Citations

Data sources
(media)

Subject matter
(impact categories)

Measures
(metrics)

Researcher Name · Research Paper Title · Targeted Countries for Paid Boosting · Altmetric™ · Citation Count

No.	Name	Research Topic	FB Reach June	FB Reach July	FB Reach Cummulated	FB Engagements June	FB Engagements July	FB Engagements Cummulated	FB Link Clicks June	FB Link Clicks July	FB Link Clicks Cummulated	Ads Targeting Country	iestory Views June	iestory Views July	iestory Views Cummulated	Click to Full-text June	Click to Full-text July	Click to Full-text Cummulated	Altmetric May	Altmetric June	Altmetric July	Altmetric Cummulated	Citations May	Citations June	Citations July	Citations Cummulated
1	Mien-Chie Hung (洪明奇)	Targeting glycosylated PD-1 induces potent anti-tumor immunity	4,997	2,155	7,152	419	170	589	80	49	129	Spain & UK	476	246	722	8	3	11	6	7	7	7	0	1	3	3
2	Mien-Chie Hung (洪明奇)	The gluconeogenic enzyme PCK1 phosphorylates INSIG1/2 for lipogenesis	3,718		3,718	394		394	155		155	Sweeden & UK	649	81	730	6	4	10	79	76	76	76	0	0	1	1
3	Cheng-Ming Chuong (鍾正明)	The Making of a Flight Feather: Bio-architectural Principles and Adaptation	1,214	5,449	6,663	29	96	125	14	22	36	Germany > UK	425	231	656	3	2	5	109	110	110	110	2	4	5	5
4	Bing-Fang Hwang (黃彬秀)	fine particulate matter exposure during pregnancy and infancy and incident asthma	31,744	2,009	33,753	2,541	80	2,621	557	11	568	India > Germany	1,162	170	1,332	10	0	10	20	20	21	21	10	11	11	11
5	Fuu-Jen Tsai (蔡輔仁)	Genetic Architecture Associated With Familial Short Stature	15,597	2,074	17,671	304	119	423	118	24	142	Brazil > Germany	753	131	884	10	0	10	1	1	1	1	1	2	2	2
6	Chih-Hsin Tang (湯智昕)	Melatonin attenuates TNF-α and IL-1β expression in synovial fibroblasts and diminishes cartilage degradation: Implications for the treatment of rheumatoid arthritis	1,686	1,688	3,374	165	119	284	64	35	99	Japan > UK	492	582	1,074	0	5	5	0	0	0	0	14	17	19	19
7	Shih-Chieh Hung (洪世杰)	Methylation and PTEN activation in dental pulp mesenchymal stem cells promotes osteogenesis and reduces oncogensis	8,503	2,044	10,547	422	121	543	79	41	120	Brazil > UK	342	227	569	3	1	4	1	1	1	1	4	4	4	4
8	Wen-Hwa Lee (李文華)	Glutathione peroxidase 8 negatively regulates caspase-4/11 to protect against colitis	2,652	7,271	9,923	236	264	500	88	98	186	UK > Brazil	390	302	692	3	2	5	22	22	22	22	2	3	4	4
9	Shih-Wei Lai (賴世偉)	Real-World Database Examining the Association Between Avascular Necrosis of the Femoral Head and Diabetes in Taiwan	1,266	23,337	24,603	55	866	921	25	353	378	US > India	211	516	727	1	1	2	4	4	4	4	15	18	19	19
10	Shih-Chieh Hung (洪世杰)	HLA-B27-mediated activation of TNAP phosphatase promotes pathogenic syndesmophyte formation in ankylosing spondylitis	2,130	1,410	3,540	121	151	272	48	63	111	Italy > Germany	299	322	621	2	1	3	82	79	79	79	3	4	4	4
11	Kuan-Pin Su (蘇冠賓)	International Society for Nutritional Psychiatry Research Practice Guidelines for Omega-3 Fatty Acids in the Treatment of Major Depressive Disorder	866	4,135	5,001	56	115	171	24	53	77	US > Brazil	221	285	506	2	2	4	76	76	75	75	11	12	13	13
12	Kuan-Pin Su (蘇冠賓)	Association of Delirium Response and Safety of Pharmacological Interventions for the Management and Prevention of Delirium A Network Meta-analysis	942	1,286	2,228	55	43	98	16	15	31	US > Germany	231	275	506	2	2	4	168	167	168	168	13	13	18	18
13	Lu-Hai Wang	metastasis		1,303	1,303		94	94		35	35	UK		286	286		2	2			1	1			1	1
14	Hung-Rong Yen (顏宏融)	A Potential Herbal Adjuvant Combined With a Peptide-Based Vaccine Acts Against HPV-Related Tumors Through Enhancing Effector and Memory T-Cell Immune Responses		1,333	1,333		114	114		19	19	UK		245	245		0	0			1	1			0	0
15	Cheng-Chieh Lin (林正介)	Visit-to-Visit Variations in Fasting Plasma Glucose and HbA1c Associated With an Increased Risk of Alzheimer Disease: Taiwan Diabetes Study		1,541	1,541		124	124		41	41	UK		237	237		1	1			32	32			28	28
	Total		75,315	57,035	132,350	4,797	2,476	7,273	1,268	859	2,127	0	5,651	4,136	9,787	50	26	76	568	563	598	598	75	89	132	132

Number of Reach · Number of Engagement · Number of Click · Number of iestory View · Number of Click to Full-text

- monthly report to showcase the progress of traffic from social media to the full-text
- every month we will launch different marketing campaigns by optimizing with different contents and different targeted countries

Lingnan University

Singapore Management University

Singapore University of Technology & Design

Top 5 subject categories by WoS publications	Top 5 subject categories by WoS publications	Top 5 subject categories by WoS publications
Education Educational Research (113)	Computer Science Software Engineering (399)	Engineering Electrical Electronic (794)
Economics (77)	Computer Science Information Systems (396)	Telecommunications (568)
Public Environmental Occupational Health (75)	Computer Science Theory Methods (368)	Computer Science Information Systems (406)
Computer Science Information Systems (62)	Computer Science Artificial Intelligence (311)	Materials Science Multidisciplinary (387)
Computer Science Artificial Intelligence (58)	Economics (226)	Computer Science Artificial Intelligence (313)

Source: Web of Science, 2021-2023 (Retrieved on April 15, 2024)

Best Ranked Subjects 🚩

Subject	Rank
Education	301-400
Management	401-500

Best Ranked Subjects 🚩

Subject	Rank
Finance	40
Computer Science & Engineering	51-75
Management	51-75
Economics	151-200
Electrical & Electronic Engineering	201-300
Law	201-300
Political Sciences	201-300
Communication	201-300

Best Ranked Subjects 🚩

Subject	Rank
Telecommunication Engineering	23
Electrical & Electronic Engineering	76-100
Computer Science & Engineering	101-150
Transportation Science & Technology	101-150
Materials Science & Engineering	151-200
Nanoscience & Nanotechnology	151-200
Chemistry	201-300
Mechanical Engineering	201-300

Interdisciplinary research is a pivotal strategy for SMU to enhance its ranking performance.

Source: Shanghai Ranking, 2023

	Research Quality			Internationalization				Reputation
QS	Highly cited papers	Citations per paper	Citations per faculty*	Intl. collab. %	Collaborating countries	Intl. faculty ratio	Intl. research network	Academic reputation
Lingnan University #641-650	11	5.13	16.3	40%	134	100	1.1	9.3
	Engage with targeted audience to solidify stable partnerships and increase citations.							
SMU #545	28	6.85	20.9	72%	94	100	1.2	11.8
	Utilize international resources, including collaborations and faculty expertise, to enhance citations.							
SUTD #477	65	10.15	64.6	76%	68	n/a	3.1	7
	Expand collaboration networks across multiple countries to bolster academic reputation.							

Source: Web of Science, 2021-2023 (Retrieved on March 4, 2024)
* The indicators and data are available on the university's profile pages on QS ranking.

Improving Research Impact via Active Outreach

Data shows, by actively disseminate research stories via social media c
views of research papers can be increased up to 500%*
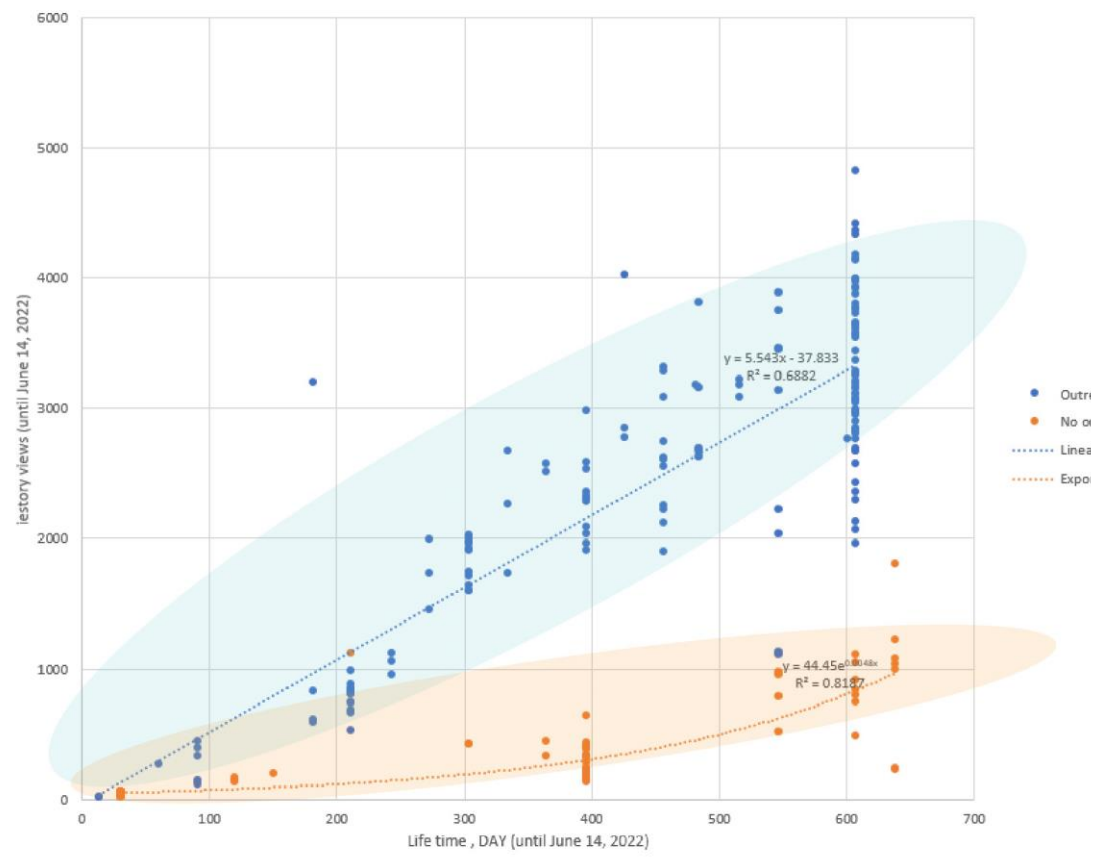
With Outreach

…the sky is the limit

- Reached out to 80+ countries
- 5x increased views

Without Outreach

… exposure and potential are limited

*Data retrieved and analyzed from actual iesResearch projects

Proactive outreach yields an increase in citations

Citation increase takes time. It typically takes about two years for citations to grow.

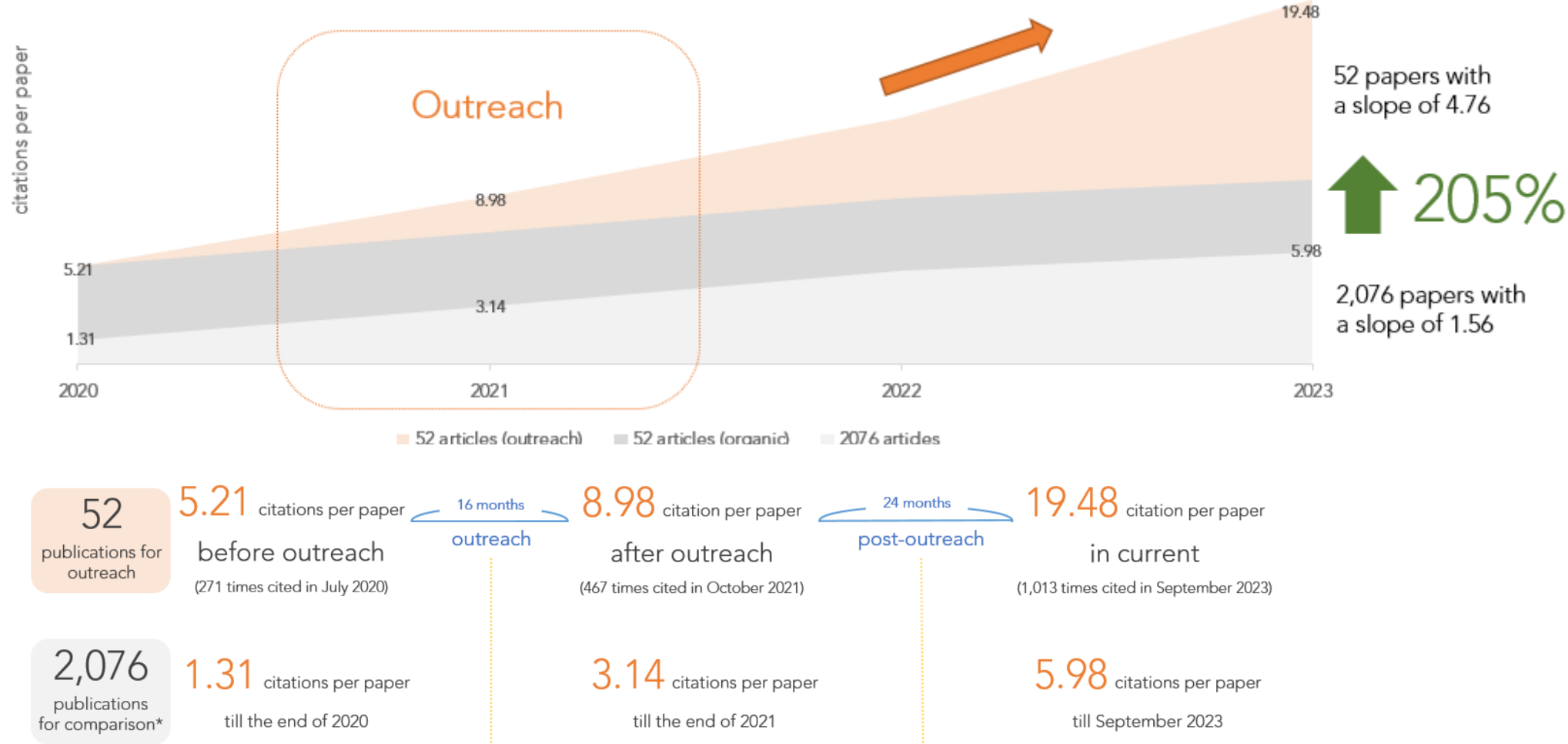| 52 publications for outreach	5.21 citations per paper	16 months outreach	8.98 citation per paper	24 months post-outreach	19.48 citation per paper
	before outreach		after outreach		in current
	(271 times cited in July 2020)		(467 times cited in October 2021)		(1,013 times cited in September 2023)
2,076 publications for comparison*	1.31 citations per paper		3.14 citations per paper		5.98 citations per paper
	till the end of 2020		till the end of 2021		till September 2023

*Data retrieved and analyzed from actual iesResearch projects

(The 2,076 UNPAD publications published from 2018 to 2020 were selected from Web of Science for comparison, as this period covers 46 of the 52 publications.)
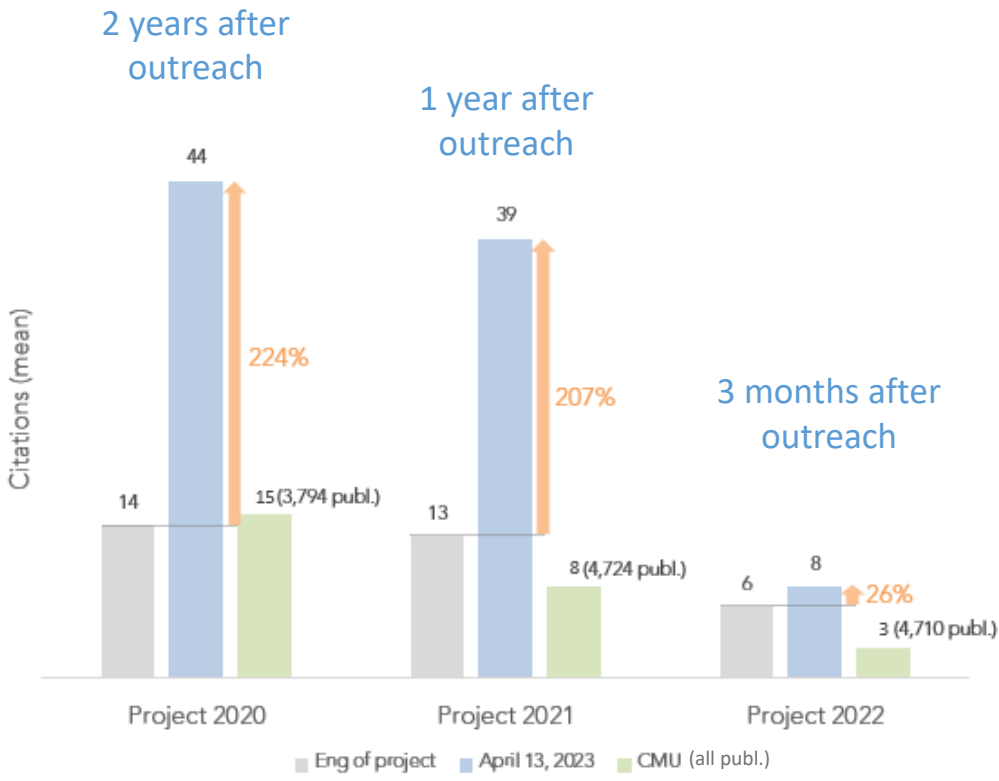
Ongoing outreach consistently boosts visibility and citations

The impact of outreach endures; views and citations continue to rise even after the promotional period concludes.


*Data retrieved and analyzed from actual iesResearch projects

Targeting country (11 countries)

Country	Times of boosting	Facebook Clicks/ Reach (average)	Twitter Clicks/ Reach (average)
Brazil	10	2.67%	1.00%
Canada	1	1.32%	0.30%
Denmark	1	3.49%	0.90%
Germany	6	1.25%	0.29%
India	22	4.10%	1.02%
Japan	11	2.24%	0.24%
South Africa	1	2.53%	0.40%
Spain	10	2.29%	0.39%
Taiwan	1	2.28%	1.85%
UK	13	1.97%	0.74%

- Of the targeting countries, India showed a good number of clicks per reach on Facebook as well as on Twitter.

- Although only 11 courtiers were targeted, a wider audience from all over the world (30 countries) has visited iestory to view the highlighted research in *Zoological Letters*.

Viewing country (30 countries)
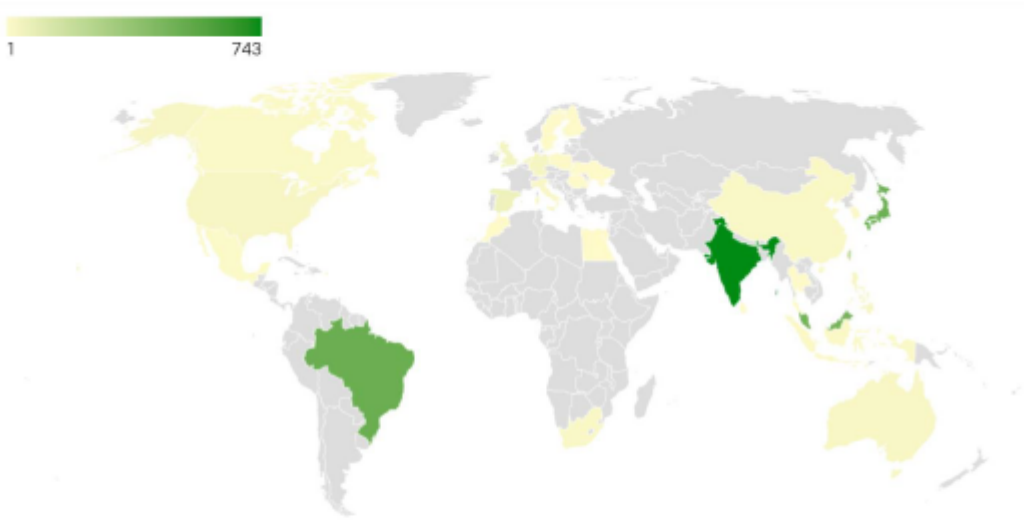
Country	Views	Country	Views	Country	Views
Australia	22	Italy	20	South Africa	17
Brazil	504	Japan	498	South Korea	8
Canada	7	Malaysia	473	Spain	54
China	15	Mexico	3	Sri Lanka	1
Egypt	2	Morocco	1	Sweden	2
Finland	1	Netherlands	32	Taiwan	203
Germany	31	Philippines	26	Thailand	1
Hong Kong	1	Poland	5	Ukraine	2
India	743	Romania	1	UK	35
Indonesia	7	Singapore	3	USA	25

Practical:

- Discuss the indicators or metrics you can use to assess the impact of your institution's research (can use the same example).

Time	
13:30	Opening & Why research visibility and impact matter?
13:50	Discussion: Share your experiences/expectation
14:00	How to define research visibility and impact?
14:30	Practical: Identifying research impact stories
15:00	What to measure to evaluate visibility and impact?
15:30	Practical: Exploring multiple metrics
16:00	Q&A
16:15	Regroup & Wrap Up at Main Hall

ies **Research**

Thank You

Please share your feedback with us!

https://iesresearch.solutions

Telegram group