Training on the Assessment of Research Impact

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

27. August 2018; Chonburi, Thailand

31. August 2018; Bangkok, Thailand

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Measuring the impact of academic research in the UK: Lessons Learnt

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

August 27th, Burapha University, Chonburi, Thailand

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Research Impact is not new!

The University of al-Qarawiyyin,
Fez, Morocco, 859

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University of Santo Tomas, Philippines, 1611

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Purpose of Training Module

Outline: This training will give an overview of recent UK experience in the practice of evaluating research impact. It will highlight what has worked well and not-so-well and identify the lessons for transferability internationally. To illustrate we will use case studies, and draw parallels with the experience and hopes of the workshop participants.

Biography: Dr Alistair Hunt is a Lecturer in Environmental Economics at the University of Bath, UK. Prior to this, he worked in the UK Department of Environment as a Government Economist. Alistair's current research is mainly empirical and focuses primarily on climate change and air quality, and is therefore very much concerned with generating impact with regulatory authorities as well as the wider public.

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Overview of Training Module

- Introduction to UK Context
  - What is Research Impact?
  - Why is it important?
  - History of Evaluation
- Measuring Research Impact
  - Academic: publications
  - Non-academic: engaging wider audiences
- Lessons learnt & way forward

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What is Research Impact? How is it defined in UK?

Higher Education Funding Council for England (HEFCE) defines impact 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.

More simply, Research Councils UK defines research impact as the demonstrable contribution that excellent research makes to society and the economy.

Key aspect of this definition is that impact must be demonstrable. It is not enough just to focus on activities and outputs that promote research impact, such as staging a conference or publishing a report.

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What is Research Impact? How is it defined in UK?

- Impacts may occur in the immediate or long-term future, and there can be challenges tracking and attributing impacts

- Impacts occur through processes of knowledge exchange and the co-production of knowledge, where new ideas are developed in relationship with the people who will put those ideas into practice.

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Why is Research Impact Important in UK?

- Government
  - Justifies spending on university sector, relative to health, defence, etc.
  - "Soft" influence in international relations
- Universities
  - Visibility in public life – justifies existence to tax-payer/funder
  - Measure of value-for-money
- Academics
  - Enhances case for being given a job
  - Enhances case for promotion
  - Validates the worth of the academic – desire to contribute to society

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Evaluating Research Productivity in the UK

- The UK has probably progressed further along the line of evaluating research productivity than any other country.

- The UK's 2014 research Excellence Framework (REF) was the latest in a series of exercises seeking to evaluate the quality of research done in UK universities across 36 subject
- This continues a series of such exercises which began in the 1980s. The next REF is scheduled for 2021.

- An innovation in REF2014 was the provision for impact of academic research, as a measure of research quality.

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Research Impact: Academic

- Primarily by publications – books, journal articles
- Key criterion: novelty – originality, value to the academic discipline
- But how to measure?

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Research Impact: Academic

Metrics used to rank academic research in publications

- Number of citations – reflects value to other researchers

(Citation = quotation from or reference to a book, paper, or author)

- Where published – status/ranking of journal

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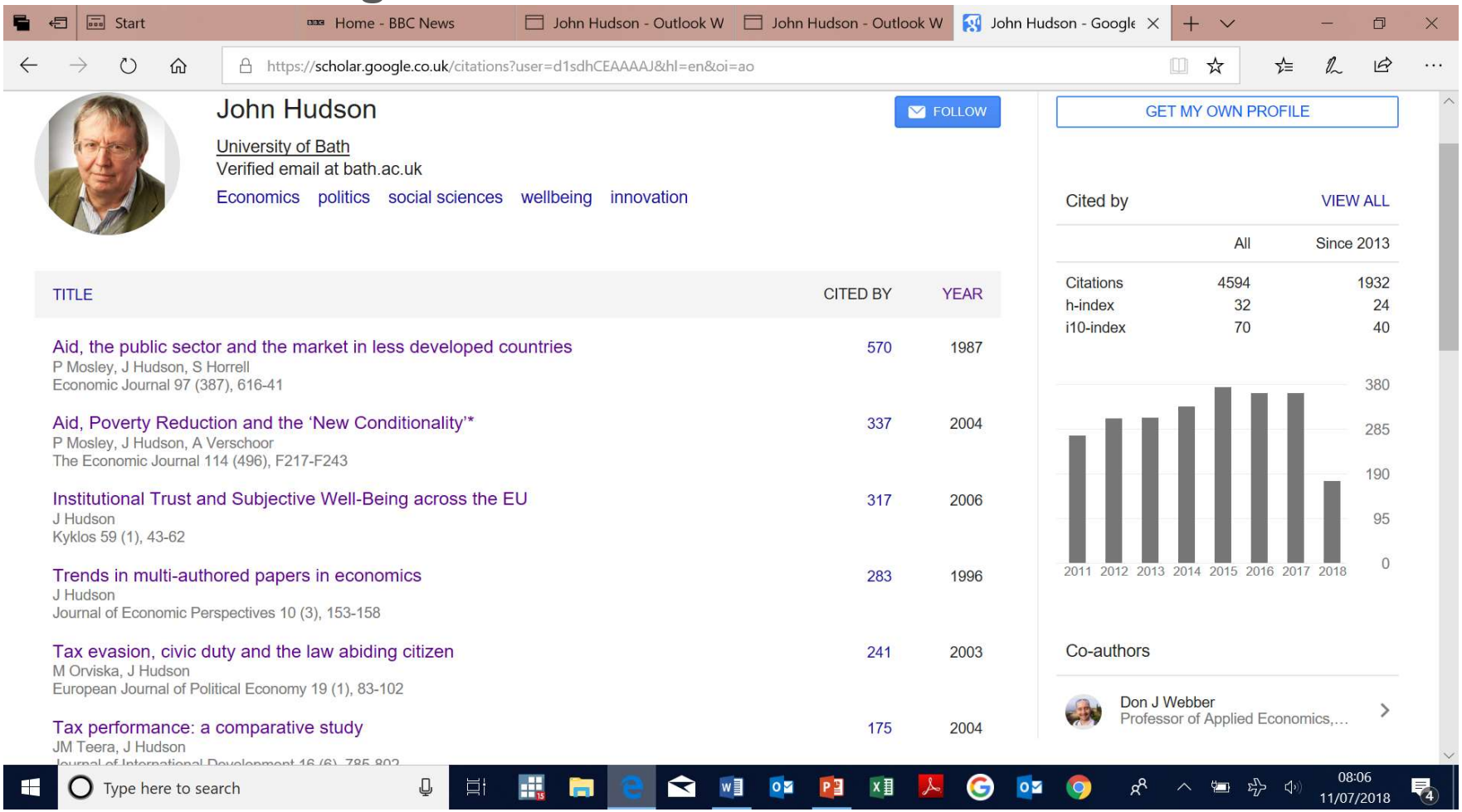
Citations – Google scholar



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Journal Ranking

UK uses grading scheme – unofficial, disputed

4* = Outstanding, international importance

3* = International importance

2* = High national importance

1* = National importance

Aim: Every academic should have 2+ articles of 3* or 4* in each 4-year review cycle

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Journal Ranking – suggestion for SE Asian countries

- Base the ranking on a simple impact factor for the journal, which weights all citations equally or according to
  - Journal
  - no. of authors
  - author order

  – see next slide that uses Web of Science

- Alternative: Ask academics at your universities to rank – for their subject area – national & international journals together

→ Refer to annual citations if disagreements.

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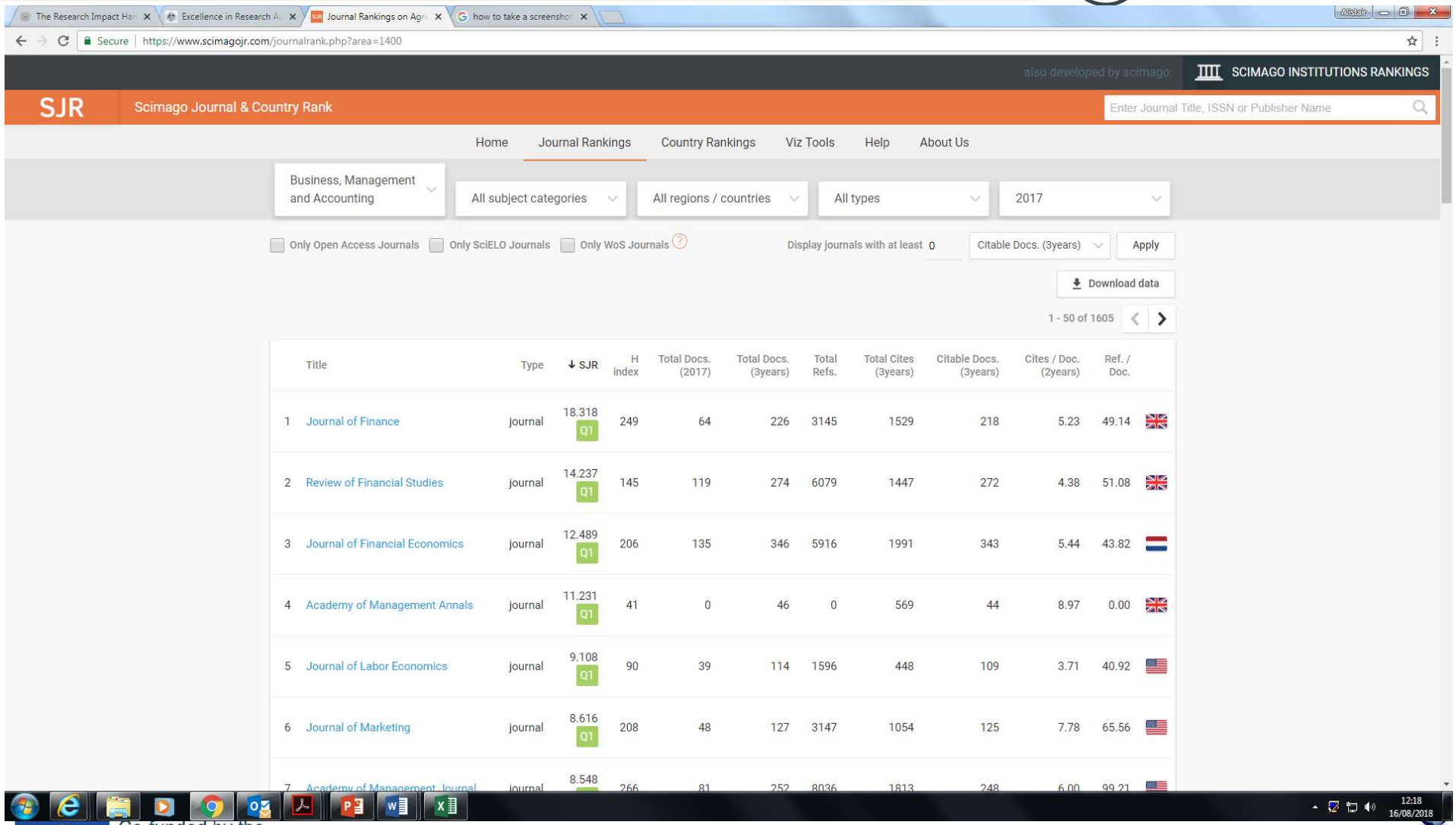
Journal Ranking – Example



	Title	Type	SJR	H index	Total Docs. (2017)	Total Docs. (3years)	Total Refs.	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc.
1	Journal of Finance	journal	18.318 Q1	249	64	226	3145	1529	218	5.23	49.14
2	Review of Financial Studies	journal	14.237 Q1	145	119	274	6079	1447	272	4.38	51.08
3	Journal of Financial Economics	journal	12.489 Q1	206	135	346	5916	1991	343	5.44	43.82
4	Academy of Management Annals	journal	11.231 Q1	41	0	46	0	569	44	8.97	0.00
5	Journal of Labor Economics	journal	9.108 Q1	90	39	114	1596	448	109	3.71	40.92
6	Journal of Marketing	journal	8.616 Q1	208	48	127	3147	1054	125	7.78	65.56
7	Academy of Management Journal	journal	8.548	266	81	252	8036	1813	248	6.00	99.21

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Writing to maximise academic impact

- Paper must be good - well written and saying something new
  - Summarise in a couple of sentences what contribution your paper makes to the literature. What is its big idea(s)?
  - Techniques it uses must be advanced, relevant and well implemented.
  - Go to the very best journal in your field and spend some days reading through a paper, understanding every word and being able to reproduce the work yourself.
  - Choose a journal and make sure you follow their style in terms of headings, formatting of references, the abstract and diagrams. Your diagrams should be clear and self explanatory.
  - Abstract should reiterate key words from title; use common phrases from your research area to connect with other interested researchers

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Writing to maximise academic impact

- Title should be well-designed!

  Characteristics of journal paper titles in the UK REF

	Length	citat-ions	colon %	? %	Papers %	Word length
Health Sciences (A)	103	11	24.09	2.843	99.52	7.65
Public Health	112	12	58.12	6.278	99.64	7.40
Sciences (B)	89	12	17.25	1.391	99.03	7.78
Physics	77	17	14.73	1.522	99.05	7.50
Maths & Computing	69	4	13.61	0.84	86.97	7.76
Social Sciences (C)	85	5	54.29	12.40	80.07	7.33
Economics	64	2	30.41	9.35	91.79	7.47
Arts & humanities (D)	78	12	62.10	7.48	38.88	7.05
Philosophy	46	na	23.31	9.07	61.67	7.44

Notes: Columns: (i) median character length of title, (ii) median citations, (iii) % using a colon, (iv) % using question mark, (v) % of submissions that are journal papers, (vi) median word length

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Writing to maximise academic impact

	number of authors	colon	question	title mark	F length	Observations
Clinical Medicine	33.106**	12.547**	-19.58**	-31.046**		
	(15.41)	(7.20)	(4.50)	(11.36)	114.612	13128
Public Health	32.606**	-0.417	-13.563**	-25.35**		
	(11.23)	(0.16)	(3.87)	(5.82)	39.916	4718
Allied Health	13.236**	-0.694	-3.651**	-7.230**		
	(9.43)	(1.06)	(2.99)	(5.53)	66.786	9783
Psychology	25.280**	1.028	-0.423	-8.742**		
	(12.12)	(1.02)	(0.24)	(5.14)	97.592	8795
Biological Sci	23.118**	9.318**	-3.852	-30.256**		
	(11.14)	(2.94)	(1.16)	(11.44)	89.3	8347
Agriculture	17.264**	3.130*	-5.486*	-6.532**		
	(5.81)	(2.42)	(2.12)	(4.14)	26.098	3810
Earth Sys	17.716**	0.331	-4.840	-21.011**		
	(6.36)	(0.25)	(1.65)	(8.30)	49.457	5037
Chemistry	8.936**	-1.602	-4.768	-6.37**		
	(3.76)	(1.23)	(1.35)	(3.85)	80.474	4618
Physics	13.853**	15.402**	-5.053	-22.849**		
	(10.55)	(2.73)	(1.11)	(7.49)	29.369	6190
Comp Sci	11.001**	2.356	-2.136	-2.654		
	(6.81)	(1.89)	(0.88)	(1.84)	36.405	5456
Geography	14.016*	0.670	-0.653	-13.260*		
	(2.12)	(0.18)	(0.12)	(2.44)	2.038	50
Economics	5.170**	2.963**	1.980	-4.505**		
	(5.28)	(3.52)	(1.56)	(3.65)	24.005	2124
All panels	0.659**	0.114**	-0.199**	-0.555**	218.77	

Regressing citations against title characteristics:

- citations increase with number of authors
- increase with use of colon
- decline with title length
- decline if use question mark

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Research Impact: Non-Academic

Justification for valuing non-academic research impact:

- Academics do not live in a vacuum from real world problems

→ problems to which the academic via their research can make a fundamental contribution in solving.

- "Ideal" measure: total impact (TI) is the sum of all the net benefits attributable to the research converted into monetary terms *discounted over time and space*

$$TI = \sum_{i=1}^{I} \sum_{t=0}^{T} \sum_{s=1}^{S} \alpha_{its} B_{its} d_{it} d_s$$

α_{its} = proportion of the innovation which is attributable to the research.
B_{its} = net benefits of the innovation in impact i, period t and spatial location s. This relates to a single piece of research which has I different impacts, e.g. revenue, jobs, health and the environment. d_{it}, the time discount factor which is assumed invariant over spatial location

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Examples of types of Potential Research Impact

Specific examples in REF guidance included:

(i) a spin-out business

(ii) informing policy decisions or changes to legislation, regulations or guidelines

(iii) informing the awareness, attitudes or understanding of the public

(iv) a new drug, treatment or therapy that has been developed, trialled with patients, or adopted

(v) improving the quality of life in a developed or developing country by new products or processes and;

(vi) changing the management of an environmental risk or hazard.

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Research Impact: Non-Academic

- The counterfactual is a critical concept.
- i.e. what would have happened if the research did not exist, compared to that with the research. Difference equals research impact.
- Scope of economic impacts - easily quantifiable
  - greater wealth,
  - cheaper prices and
  - more revenue,
- Less easily quantifiable in monetary terms
  - effects on public health,
  - the environment,
  - the quality of life (QOL).

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$$TI = \sum_{i=1}^{I} \sum_{t=0}^{T} \sum_{s=1}^{S} \alpha_{its} B_{its} d_{it} d_s$$

S denotes the number of spatial locations.

For UK research these could comprise:
(i) the UK,
(ii) the EU,
(iii) developing countries, and;
(iv) non-EU developed countries.

- If interested in determining impact per se then little justification for spatial discounting.

- If seeking to determine the benefits of the public funding of research of UK based institutions, it becomes more relevant.

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Question: What are the non-academic impacts of your research?

Are there any challenges to assessing these impacts?

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Challenges to Assessing Research Impacts

- Tendency for researchers and research funders to overestimate, or at least overstate, the likely short- and medium-term impact of research
- Research can have direct as well as indirect economic effects. Moreover, as the world is becoming a small nexus of interconnecting research entities it is particularly difficult to attribute domestic economic impacts to only domestic research outcome.
- Time lag between research undertaken and the realization of impact can be variable and often lengthy

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Measurement of Research Impact

Possible methods to measure (De Campos (2010)):

(i) case studies

- offer a detailed view of how and why processes occur, and are useful in evaluating social, cultural, policy, and practice impacts
- But danger they focus on successful, rather than unsuccessful, research

(ii) surveys

- expert testimony
- But need to interview all relevant people

(iii) quantitative approaches

- e.g. returns on investment
- But only applicable to commercialised research

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Research Impact: Non-Academic (UK)

Difficulties in producing reliable measures → UK REF uses case study approach

- Avoids quantitative advantages of some types of impact e.g. patents
- *Impact case studies should not be narrowly interpreted, need not solely focus on socio-economic impacts but should also include impact on government policy, on public engagement and understanding, on cultural life, on academic impacts outside the field, and impacts on teaching. Stern Report (2016).*
- *Impact must be based on research of demonstrable quality. However, case studies could be linked to a research activity and a body of work as well as to a broad range of research outputs. Stern Report (2016).*

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Research Impact: Non-Academic (UK)

- Innovation in REF2014: provision for impact of academic research, as a measure of research quality.
- The broad definition of research impact was "*an effect on, change or benefit to, the economy, society, culture, public policy or services, health, the environment or quality of life*" (REF rules).
- Use of case studies to illustrate impact of research - identify that it had made a demonstrable difference in terms of economic, social and cultural impact.
- Each academic entered in the REF allowed to submit four papers (academic papers + impact case studies)

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Research Impact: Non-Academic (UK)

5 sections to each REF case study:
(i) a summary,
(ii) a description of the underpinning research
(iii) the references,
(iv) the impact and
(v) corroborating evidence for this impact.

Examples of impact may include effects on, changes or benefits to the

activity, attitude, awareness, behaviour, capacity, opportunity, performance, policy, practice, process or understanding

of an audience, beneficiary, community, constituency, organisation or individuals.

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Impact Case Studies – early examples

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Jniversity	Case study	Gains	Comment
Main funders			
Clinical medicine			
Cardiff: Welsh Assembly	Characterization of genes	Health, revenue, public engagement.	No attempt is made to quantify the health benefits, even in terms of people affected.
Exeter & Plymouth: MRC et al.	Therapeutic intervention in patients with neonatal diabetes	Health.	The new treatment has been adopted internationally such that more than 400 patients worldwide have had their diabetes therapy changed since 2005. But 400 worldwide does not seem that great an impact
Glasgow: NHS Scotland	Smoke-free legislation and hospitalizations for Acute Coronary Syndrome	Public engagement	Evaluated the impact of legislation in Scotland.
Imperial college: EU and multinationals	Anti-TNF: a revolution in the treatment of RA	Revenue, health	Health benefits are not really quantified. Sales of the three licensed TNF inhibitors reached $9 billion in 2006.
Imperial college: MRC	Development of a spin-out company to investigate synthetic oxyntomodulin analogues for obesity therapy	Revenue, potential health	Spin-out firm sold for approximately $30 million with potential additional payments of $120 million. Potential health benefits, as drugs are still being developed, are discussed with some numbers.
Oxford: MRC	Reduction of recurrent stroke risk by early intervention	Revenue, health	Expectation of preventing about 10,000 strokes per year and saving the NHS up to £200 million.
Physics			
Cambridge: EPSRC	Teraview and teraherz imaging	Revenue (spin-out company), health, security.	Health and security impacts are only cursorily dealt with.

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Impact Case Studies – early examples

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University	Case study	Gains	Comment
Durham: EPSRC	A spin-out company, manufacturing large semiconductor crystals for medical and security imaging.	Revenue (spin-out company), medical, space, security	Non-revenue impacts only cursorily looked at.
Imperial college: royal society	Nanomagnetism and anticounterfeiting	Revenue, employment (spin-out company), industrial and consumer safety, and countering criminal and terrorist activity	Non-revenue impacts only cursorily looked at.
Liverpool John Moores (LJMU)	Spaceport: a tourist attraction based on astronomy	Revenue and local tourist impact, public engagement	Difficult to see how research relates to this.
Warwick: royal society	The consumer electronics industry: The Floating Low-energy Ion Gun.	Revenue	Non-revenue impacts not discussed.
ESES			
Glasgow: MAFF	Establishing methods to detect irradiated foods	Consumer safety	Led to new UK and European standards. Little attempt is made to quantify this impact
Leeds: industry	Turbidites research group consultancy	Revenue and help to oil industry	This is an industry-funded consultancy group and it is difficult to separate the research component from the consultancy one.
Manchester: NERC, ESRC	Spin-out for extensive environmental monitoring	Spin-out company: two products for monitoring water quality in distribution and one for monitoring ground gas. Patents have been applied for and licensed to Siemens	Revenue aspects stressed, although not so much the environmental and QOL benefits. It is not clear which of the research publications feed into this and how.

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Impact Case Studies – early examples

University	Case study	Gains	Comment
Stirling: BBSRC, Leverhulme	Conservation of bumblebees	Bumblebee preservation, public engagement, small amount of employment	Centres around the founding of the Bumblebee Conservation Trust, with 7,000 members.
UEA: MET office	Compilation of the CRU Global and Hemisphere Land Area Temperature Record and Future Climate Scenario Analysis.	Improved climate change scenarios and UK weather forecasting.	Does not discuss potential secondary impacts.
Social work and social policy (SWSP)			
Leeds: ESRC	Evidence-based policy: Applications of methodology.	Influenced the 'evidence based policy movement'.	This is essentially work done for the commons filtering through to impact on policy evaluation and as such is difficult to evaluate its contribution.
LSE: EU's DG employment and social affairs	Financing long-term care	Better planning for present and future costs and benefits associated with alternative scenarios for social care.	Much of the impact via modelling exercises.
Ulster: ESRC	The review of public administration in Northern Ireland	Potential cost savings and the research looked at the origins, implementation and impacts of the review on working conditions in public sector.	One of the few to emphasize that it will always be difficult to establish a direct cause and effect relationship between research conducted and impacts on public policy.
York: ESRC	Child support research and policy impacts	Public sector cost savings and reduction in personal conflict between estranged parents	Significant impact claimed on separated parents and their relationships.

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Impact Case Studies – early examples

- No attempts to put overall monetary value on impacts
- Medical studies – patents (revenues) + health benefits

E.g. Cardiff research facilitated identification/characterization of genes for major inherited disorders. New genetic tests which allow earlier/more accurate diagnosis now available in the UK and Europe. In US, testing kit which uses MYH gene technology, generated > £100,000 in royalty income for Cardiff University.

- Physics case studies - spin-out companies. Benefits include revenue, employment, and context-specific benefits such as health and security.

e.g. Durham's research on vapour growth of semiconductor compounds → patented breakthrough with uses in energy-sensitive X-ray detectors and thermal imaging. The process commercialized by spin-out company which employs 60 people.

Incorporated detector technology into medical imaging products and security systems for screening liquids and gels at airports, helping to reduce current restrictions on carry-on baggage and duty-free goods.

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Impact Case Studies – early examples

Impact of the social work and social policy (SWSP) case studies are focused more on policy, although cost savings are also emphasized.

But, surprisingly, there is little on public engagement.

One problem with the SWSP studies is that this research is part of a substantial body of research which will be impacting on the different decision makers. But not generally emphasized.

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What matters...

- Having actual impact from 2*research (preferably far-reaching and significant)
- Being able to articulate that impact
- Being able to evidence the impact
- Writing well: a coherent, easy to read narrative

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REF case study:
A story in four pages

- There was a PROBLEM (preferably a big one)
- Research HERE aimed to solve the problem
- The problem was solved ('significance')
- The benefit spread nationally and internationally ('reach')

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General observations: what does good look like?

- Able to **articulate the impacts** and explain the link between the research and impact*.
- Quality of narrative: coherently **explains the links** in the impact story.
- Offers a convincing account of **why the research** matters beyond academia.
- Reach and significance: is **demonstrated throughout the narrative, put into context and not over claimed**.
- **Uses the evidence** to illustrate the impact claim.
- **Clear presentation style** (possibly sub-headings, referencing system for evidence sources etc.)
- **Light on technical language**

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7 essential elements

Elements 1:
Articulate the impacts of the research

Element 2:
Establish the narrative: what story do you want to tell?

Element 3:
Explain why the impact is important

Element 4: Reach and significance: weaved into the detail

Element 5:
Incorporate the evidence to illustrate the impacts

Element 6:
Explain the journey from research to impact

Element 7:
Seek feedback: is the writing straightforward and persuasive?

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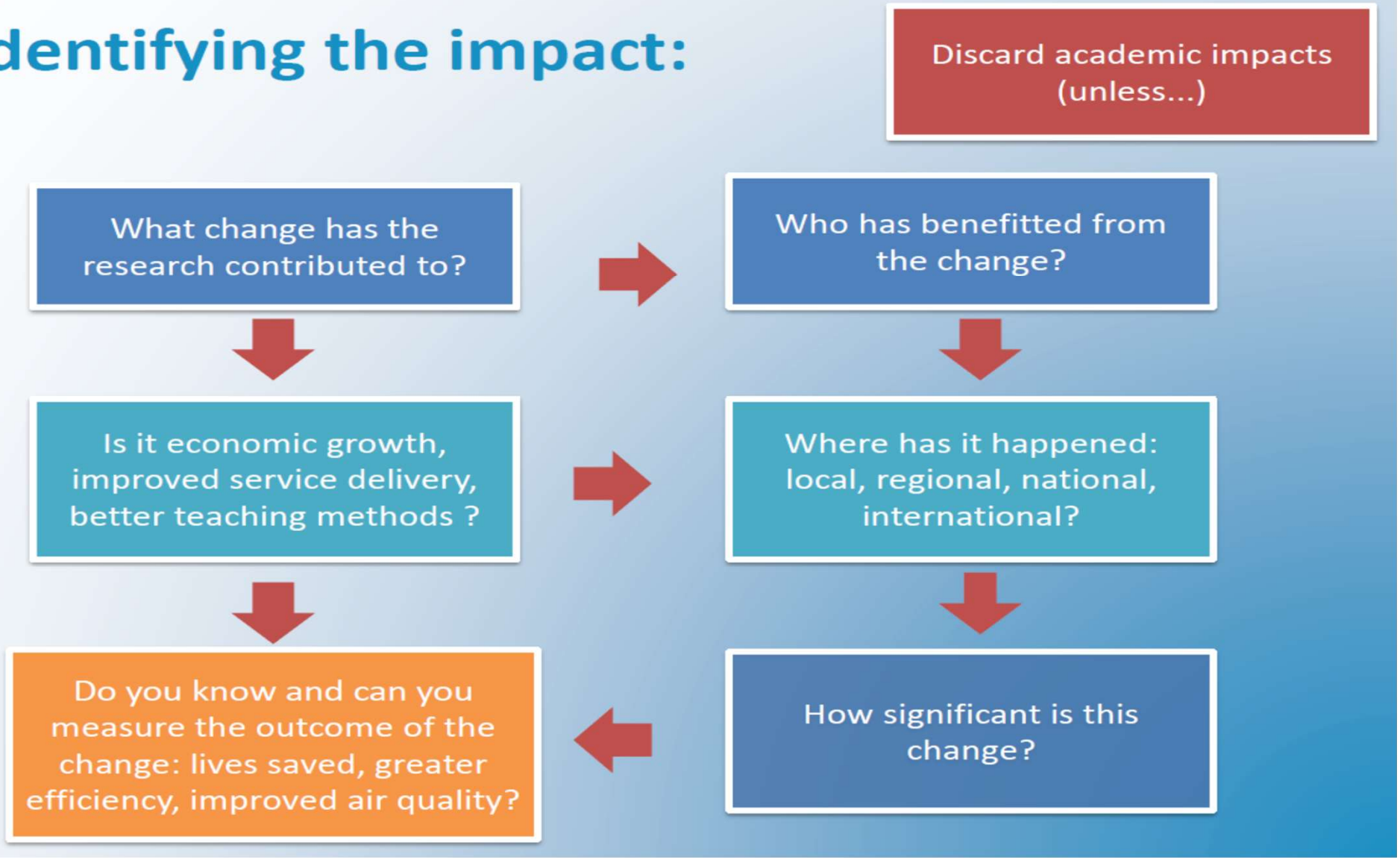
Identifying the impact:



- **Details matter, use them throughout**

Red Dust Road	Newcastle (UoA 29)
Impact claimed	Public discourse surrounding issues of identity and adoption
Reach and Sig	Appeared 16 times on BBC national radio between 2008-13; offers quote from Guardian columnist; cites two adoption websites (one in USA) that recommend the book and use quotes from their reviews of book.
Evidence	Attributed quotes from different sources incorporated into body of section 4 (including fan letters)

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- **Include novel detail**

Motion Blur	Bournemouth (UoA 36)
Impact claimed	Contributed to the commercial success of Pixar's PRman rendering software
Reach and Sig	PRman is used to produce all Pixar films as well as being sold commercially to other animation and digital effect companies...PRman has been used by 47 out of 53 nominees for Visual Effects Oscars.
Evidence	Testimonial from PRman director plus indep[illegible]ent sources on value of animation industry and us[illegible] Pixar's software.

Using this detail about the number of Oscar nominated films that used the technology is a nice way of illustrating the significance.

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Examples of Evidence used in REF2014

Media debate

Audience reaction or feedback (from surveys)

Independent evaluative reports

Quantitative data relating economic benefits (% increase in visitor numbers)

Jobs created

Audience figures (including viewer and listeners)
Visitor statistics

Parliamentary records of expert testimony

Measures of improved welfare

Inclusion in training materials

Google analytics from websites

Media/ blog/ Twitter commentary as evidence of public debate/discourse

Reactions of individual participants

Reviews: event, play, exhibition etc.

Written testimonials from partners or organisations impacted upon

Taskforce recommendations that cite research

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University of Bath Web-page

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Top Tips for Impact

PLAN for impact in your research design	**ENGAGE** non-academic stakeholders in your research	**EVIDENCE** your impact as you go
• Plan for impact at an early stage of your research design	• Identify your stakeholders/ audiences and think about why they might want to engage with you	• Keep documents that show how people have engaged with, and benefited from, your research
• Remember that in your grant application you can cost in impact activities	• Consider why, when and how you will engage with each group	• Work with the Press Team so they can capture your media coverage
• Consider the wide range of activities that can enhance impact (see the Impact Gateway)	• Think through what you want to happen as a result of your engagement	• Record evidence on Pure

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Lessons learnt: The importance of an entrepreneurial partner who can take the impact forward.

Gladwell: any idea epidemic depends on a small number of individuals with specific skills: ***mavens****,* ***connectors*** *and* ***salespeople****.*

Most academics are 'mavens' - ideas people.

'Connectors' are those people you know who always know someone who can help

Sales people: (e.g. science writers, knowledge brokers, your institute public relations officers and/or film-makers) to translate your work into terms that can be understood by those you want to influence.

Need to bring together all three skill groups

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Working with stakeholders

Build long-term, two-way, trusting relationships with those who will use your research and co-generate new knowledge together:

- Have two-way dialogue as equals with likely users of your research
- Build long-term relationships with the users of your research
- Work with knowledge brokers and professional facilitators
- Understand what will motivate research users to get involved
- Work with stakeholders to interpret findings and co-design communication products

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Most commonly cited impact pathways

- Publications: academic journals, policy briefs, industry publications
- Advisory roles: being asked to contribute to Government inquiries, reports, panels and committees
- Media coverage: exposure in mass media e.g. TV/radio
- Partnerships and collaborations with industry and NGOs: harness lobbying power of organisations to promote work
- Presentations to industry, the public and Government: face-to-face meetings: way to get research findings noticed and understood - audience has opportunity to question researcher
- Developing easily accessible online materials

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Next Steps?

Individual academics: Make a self-evaluation – how does your research have impact?

So, when you do research ask yourself:
- Is there any potential non-academic impact here?
- Could it be of interest to any private or public sector organization.
- If not, then is there a public engagement angle?

Benefits:
i) the academic knows the research and the impact better than anyone else.
ii) getting them to do it raises in themselves the awareness of the importance of impact.
iii) there may be an element of bias or favouritism, if done by somebody other then the individual.

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Research impact and international accreditation of university programmes

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

August 27, 2018; Burapha University International College

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REPESEA

Existing accreditation systems for business and public administration

- Business: as three largest international business school accreditation associations can be considered:
  - AACSB - The Association to Advance Collegiate Schools of Business (based in Tampa, Florida, USA)
  - AMBA - The Association of MBAs (based in London, United Kingdom)
  - EFMD/EQUIS - European Quality Improvement System (based in Brussels, Belgium)

- Public Administration:
  - ICAPA (worldwide)
  - NASPAA (US based but wordwide)
  - EAPAA (Europe only)

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AACSB

- AACSB International (AACSB) connects educators, students, and business to achieve a common goal: to create the next generation of great leaders.
- Synonymous with the highest standards of excellence since 1916, AACSB provides quality assurance, business education intelligence, and professional development services to over 1,600 member organizations and more than 800 accredited business schools worldwide.

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AACSB

Institutional Accreditation

- Institutional accreditation is an overall review of the entire university, and is typically done by a country's national or regional accrediting body (such as the six regional accrediting bodies in the United States). These national agencies perform a review of the entire university, from its operating budgets to its student services.

Specialized Accreditation

- Once institutional accreditation is earned, universities can take accreditation a step further and seek "specialized" or "professional" accreditations for each of their disciplines. Specialized reviews are done by nongovernmental, private agencies that are knowledgeable about a particular field of study. For example, a College of Medicine can apply for specialized accreditations that specifically review its medical programs.

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AMBA

- The Association of MBAs is the impartial authority on postgraduate management education and is committed to raising its profile and quality standards internationally for the benefit of business schools, students and alumni and employers. AMBA established its vision in 1967.
- AMBA accreditation is awarded to the best **programmes** internationally and denotes the highest standard of achievement in postgraduate business education. Students, business schools, graduates and employers all recognise it as a gold standard.

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EFMD

- EFMD is a global, membership-driven organisation, based in Brussels, Belgium, with offices in Asia and the Americas. As the largest international association in the field of management development, the EFMD network includes over 900 institutional members and reaches more than 30,000 management development professionals from academia, business, public service and consultancy across 88 countries worldwide.

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EFMD

- The different services EFMD offers include conferences and events around the world that address key issues for the industry, surveys and the dissemination of knowledge, quality improvement and accreditation via EQUIS, EPAS, EOCCS and CLIP as well as the EFMD GN Deans Across Frontiers mentoring programme (EDAF) and Business School Impact System (BSIS).
- EFMD offers three accreditation systems, one for schools (EQUIS), one for programmes (EPAS), one for corporate learning organisations (CLIP) and a certification system for online courses (EOCCS).

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EQUIS

- EQUIS assesses **institutions** as a whole. It assesses not just degree programmes but all the activities and sub-units of the institution, including research, e-learning units, executive education provision and community outreach. Institutions must be primarily devoted to management education.
- EQUIS looks for a balance between high academic quality and the professional relevance provided by close interaction with the corporate world. A strong interface with the world of business is, therefore, as much a requirement as a strong research potential. EQUIS attaches particular importance to the creation of an effective learning environment that favours the development of students' managerial and entrepreneurial skills, and fosters their sense of global responsibility. It also looks for innovation in all respects, including programme design and pedagogy.
- Institutions that are accredited by EQUIS must demonstrate not only high general quality in all dimensions of their activities, but also a high degree of internationalisation.

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ICAPA

- The International Commission on the Accreditation of Public Administration and Training Programs (ICAPA), was established in 2012 by the International Association of Schools and Institutes of Administration (IASIA). ICAPA provides services to public administration education and training **programs** throughout the world. It is a product of a process that began several years before when the United Nations Department of Public Administration and Development Management established the UN/IASIA Taskforce on Standards of Excellence for Public Administration Education and Training. The standards which the UN/IASIA Task Force developed, and which ICAPA applies in its work, involved input from over 1,500 public administration scholars and practitioners from throughout the world. As such, while there are other national and regional accrediting authorities, ICAPA is the only truly international accrediting body.

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NASPAA

- NASPAA Accreditation is the peer review quality assurance process for graduate-level, master's degree **programs** in public policy, affairs, and administration.

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EAPAA

- Since 1999 the European Association for Public Administration Accreditation (EAPAA) has helped European public administration programmes to improve and assure their quality through accreditation. EAPAA is the only quality assurance authority in Public Administration which is active throughout Europe. It has by now accredited more than 50 programmes across the continent, including most leading institutes in the field.
- For EAPAA, the evaluation of a **programme** is more than a simple check of procedures and formalities. Its work is based on peer review: programmes under review are assessed by experienced and internationally recognized senior academics from the public administration field, who know what it is to run a public administration programme. As a result, the feedback is based on a thorough knowledge of the content and on first-hand experience. The aim is to give high-quality feedback that helps programmes reach higher levels of teaching excellence.
- EAPAA's evaluation is mission-based. The backgrounds of programmes and conditions in which they work differ vastly across and within countries. While maintaining general quality standards, evaluators always take the programme's unique position and choices into account. There is no single model for a good public administration programme and EAPAA leaves room for programmes to develop their own specific profile.

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- Questions to participants:
  - National accreditation systems in countries of participants?
  - Anybody from school or programme with international accreditation? Experience?

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Research impact and international accreditation

- Research impact of the school/programme is evaluated normally be several standards of international accreditation.

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AACBS

- Initial Self-Evaluation Report and Final Self-Evaluation Report, site visit.

General requirement:

- In the accreditation process, business schools must document how they are making a difference and having impact. This means that AACSB will continue to emphasize that business schools integrate assurance of learning into their curriculum management processes and produce intellectual contributions that make a positive impact on business theory, teaching, or practice.
- Impact also has a broader meaning in that the business school, through the articulation and execution of its mission, should make a difference in business and society as well as in the global community of business schools and management educators.

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AACBS

- Standard 2: The school produces high - quality intellectual contributions that are consistent with its mission, expected outcomes, and strategies and that impact the theory, practice, and teaching of business and management.

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Table 2-1 Intellectual Contributions

Part A: Five-Year Summary of Intellectual Contributions

Faculty Aggregate and summarize data to reflect the organizational structure of the school's faculty (e.g., departments, research groups). Do not list by individual faculty member.	Portfolio of Intellectual Contributions				Types of Intellectual Contributions										Percentages of Faculty Producing ICs	
	Basic or Discovery Scholarship	Applied or Integration/Application Scholarship	Teaching and Learning Scholarship	Total*	Peer-Reviewed Journals	Editorial-Reviewed Journals and Articles	Peer-Reviewed Academic/Professional Meeting Proceedings	Academic/Professional Meeting Presentations	Competitive Research Awards Received	Textbooks	Case Studies	Professional practice standards, or public policy	Other IC Type Selected by the School	Total*	Percent of Participating Faculty Producing ICs	Percentage of total Full Time Equivalent (FTE) faculty producing ICs
Department 1																
Department 2																
Department 3																
Grand Total																

Part B: Alignment with Mission, Expected Outcomes, and Strategy

Provide a qualitative description of how the portfolio of intellectual contributions is aligned with the mission, expected outcomes, and strategy of the school.

Part C: Quality of Five-Year Portfolio of Intellectual Contributions

Provide evidence demonstrating the quality of the above five-year portfolio of intellectual contributions. Schools are encouraged to include qualitative descriptions and quantitative metrics and to summarize information in tabular format whenever possible.

Part D: Impact of Intellectual Contributions

Provide evidence demonstrating that the school's intellectual contributions have had an impact on the theory, practice, and/or teaching of business and management. The school is encouraged to include qualitative descriptions and quantitative metrics and to summarize the information in tabular format whenever possible to demonstrate impact. Evidence of impact may stem from intellectual contributions produced beyond the five-year AACSB accreditation review period. Examples can be found in Appendix I.

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AACBS

- Standard 15: The school maintains and strategically deploys participating and supporting faculty who collectively and individually demonstrate significant academic and professional engagement that sustains the intellectual capital necessary to support high-quality outcomes consistent with the school's mission and strategies.
- Normally, faculty may undertake a variety of professional engagement activities to interact with business and management practice to support maintenance of PA status. A non-exhaustive list of professional engagement activities may include the following:
  - Consulting activities that are material in terms of time and substance
  - Faculty internships
  - Development and presentation of executive education programs
  - Sustained professional work supporting qualified status
  - Significant participation in business professional associations , professional standard-setting bodies or policy-making bodies
  - Practice -oriented intellectual contributions
  - Relevant, active service on boards of directors
  - Documented continuing professional education experiences
  - Participation in professional events that focus on the practice of business, management and related issues
  - Participation in other activities that place faculty in direct contact with business or other organizational leaders

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AACBS

- Examples of Impact Metrics:
  - Mission Alignment Impact
  - Academic Impact
  - Teaching/Instructional Impact
  - BA/MA Level Educational Impact
  - Doctoral Education Impact
  - Practice/Community Impact
  - Exectutive Education Impact
  - Research Centre Impact

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MISSION ALIGNMENT IMPACT

- Alignment of intellectual contribution outcomes with themes or focus areas valued by the business school's mission (e.g., global development, entrepreneurship, innovation)
- Percentage of intellectual contribution outcomes that align with one or more "mission-related" focus areas for research
- Percentage of faculty with one or more intellectual contribution outcomes that align with one or more mission-related focus areas
- Research awards and recognition that document alignment with one or more "mission-related" focus areas for research
- Substantive impact and carry-forward of mission as stated in Standard 1 and as referenced throughout the remaining accreditation standards
- Linkage between mission as stated in Standard 1 and financial history and strategies as stated in Standard 3

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ACADEMIC IMPACT

- Publications in highly recognized, leading peer-review journals (journals in a designated journal list, Top 3, Top 10, etc.)
- Citation counts
- Evidence of impact on stakeholders and society such as changes in business practices, professional standards, or public policy
- Case studies that document the impact of intellectual contributions on stakeholders and society
- Download counts for electronic journals
- Editorships, associate editorships, editorial board memberships, and/or invitations to act as journal reviewers for recognized, leading peer-review journals
- Elections or appointments to leadership positions in academic and/or professional associations, standards setting bodies and professional societies
- Recognitions for research (e.g., Best Paper Award), Fellow Status in an academic society, and other recognition by professional and/or academic societies for intellectual contribution outcomes
- Invitations to participate in research conferences, scholarly programs, and/or international, national, or regional research forums
- Inclusion of academic work in the syllabi of other professors' courses

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TEACHING/INSTRUCTIONAL IMPACT

- Grants for research that influence teaching/pedagogical practices, materials, etc.
- Case studies of research leading to the adoption of new teaching/learning practices
- Textbooks, teaching manuals, etc., that are widely adopted (by number of editions, number of downloads, number of views, use in teaching, sales volume, etc.)
- Publications that focus on research methods and teaching
- Research-based learning projects with companies, institutions, and/or non-profit organizations
- Instructional software (by number of programs developed, number of users, etc.)
- Case study development (by number of studies developed, number of users, etc.)

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BACHELOR'S/MASTER'S LEVEL EDUCATION IMPACT

- Mentorship of student research reflected in the number of student papers produced under faculty supervision that lead to publications or formal presentations at academic or professional conferences
- Documented improvements in learning outcomes that result from teaching innovations that incorporate research methods from learning/pedagogical research projects
- Results from engagement of students in consulting or business based projects
- Increased recruitment, retention, graduation, placement of under-represented student populations
- New venture formation
- Hiring/placement of students
- Career success of graduates beyond initial placement
- Placement of students in research-based graduate programs
- Direct input from organizations that hire graduates regarding graduates' preparedness for jobs and the roles they play in advancing the organization
- Movement of graduates into positions of leadership in for-profit, non-profit, and professional and service organizations

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DOCTORAL EDUCATION IMPACT

- Hiring/placement of doctoral students, junior faculty, and post-doctoral research assistants
- Publications of doctoral students and graduates
- Invited conference attendance, as well as awards/nominations for doctoral students/graduates
- Research fellowships awarded to doctoral students/graduates
- Funding awards for students engaged in activities related to doctoral research
- Case studies that document the results of doctoral research training activities, such as the transfer of knowledge to industry and impact on corporate or community practices
- Research outputs of junior faculty members (including post-doctoral junior professors,

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PRACTICE /COMMUNITY IMPACT

- Media citations (e.g., number, distribution, and effect)
- Requests from the practice community to utilize faculty expertise for consulting projects, broadcast forums, professional development activities, researcher-practitioner meetings, faculty/student consulting projects, etc.
- Publications in practitioner journals or other venues aimed directly at improving management expertise and practice
- Consulting reports resulting from the engagement of faculty and students
- Research income from various external sources, such as industry and community/governmental agencies to support individual and collaborative research activities
- Community enhancement outcomes resulting from the engagement of faculty and students in community issues
- Case studies based on research that has led to solutions to business problems
- Adoption of new practices or operational approaches as a result of faculty scholarship
- Presentations and workshops for business professionals
- Invitations for faculty to serve as experts on policy formulation, witnesses at legislative hearings, members of special interest groups/roundtables, etc.
- Tools/methods developed for companies
- Memberships on boards of directors of corporate and non-profit organizations
- Memberships on professional standards setting bodies or policy-making bodies

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EXECUTIVE EDUCATION IMPACT

- Sustained and consistent involvement of research-active faculty in executive education programs
- Sustained success of executive education programs based on demand, level of participation, and repeat business
- Market research confirming value of executive education programs delivered by research-active faculty
- Consulting activities of research active faculty that stem from participation in executive education activities
- Inclusion of cases and other materials in degree programs that can be identified as resulting from executive education activity
- Partnerships between the school and organizations that participate in executive education programs, which benefit the school's teaching, research, and other activities and programs
- Involvement of executive education participants and their organizations in the teaching mission of the school (e.g., executive-in-residence program)
- Linkage between organizations participating in executive education and student internships, as well as placement of graduates in entry-level positions

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RESEARCH CENTER IMPACT

- Invitations by governmental or other agencies/organizations for center representatives to serve on policy-making bodies
- Center research projects funded by external governmental, business, or non-profit agencies

- Continued funding (e.g., number of donors, scale of donations)
- Number of web visits to research center website (e.g., tracking data from Google Analytics)
- Number of attendees (representing academics, practitioners, policymakers, etc.) at center-sponsored events
- Sustained research center publications that are funded by external sources or that are highly recognized as authoritative sources of analysis and perspectives related to the center's core focus

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AMBA

- Self-Assessment Form and Self Audit Report and receive a visit from an AMBA accreditation panel.
- Key Principles:
  - Impact & Lifelong Learning:
    - Graduates should be able to demonstrate significant career enhancement as a result of their MBA and should be supported in their continual development by the Institution.
  - Faculty Quality & Sufficiency:
    - The Institution must be able to provide the MBA portfolio with sufficient and balanced expertise in teaching, research and consultancy that guides the MBA learning experience in a cohesive and integrated way.

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EQUIS

- Briefing Visit
- Self –Assessment
- Peer Review Visit

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EQUIS

- Does the School have an explicit policy and strategy for managing its interface with the corporate world?
- To what extent is the management community satisfied with the School's programmes and graduates?
- What opportunities do faculty have to interact with the management community? How do these benefit individuals and programmes?
- How does the School enable faculty to be fully aware of modern business practice?
- Do faculty members participate in academic and professional organisations?
- How does the School ensure that faculty are aware of the latest developments in their field and are fully aware of modern business practice?
- To what extent do faculty members engage in consulting activities?
- What is the current research potential of the core faculty?
- Describe how the School's overall R&D production can be considered relevant to its corporate markets. Describe R&D activities that are sponsored by companies. Describe R&D (research projects, cases, etc.) initiatives run in collaboration with companies. List consultancy missions that involve a R&D dimension

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ICAPA

- Application, self-assessment, site visit.

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ICAPA

- 1. Public Service Commitment:
  - The faculty and administration of the program are defined by their fundamental commitment to public service. They are in all of their activities (teaching, training, research, technical assistance and other service activities) at all times absolutely committed to the advancement of the public interest and the building of democratic institutions. This is true within all facets of the program including internal organizational arrangements as well as programmatic activities at local, regional, national and international levels.

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ICAPA

- 2. Advocacy of Public Interest Values:
  - The program's faculty and administration reflect their commitment to the advancement of public service by both their advocacy for, and their efforts to create, a culture of participation, commitment, responsiveness and accountability in all of those organizations and institutions with which they come into contact. In so doing, both by pedagogy and example, they prepare students and trainees to provide the highest quality of public service.

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ICAPA

- 3. Combining Scholarship, Practice and Community Service:
  - Because public administration is an applied science, the faculty and administration of the program are committed to the integration of theory and practice and as such the program draws upon knowledge and understanding generated both by the highest quality of research and the most outstanding practical experience. Consequently, the faculty, administration and students of the program are actively engaged through its teaching, training, research and service activities with all of their stake holder communities from the smallest village or city neighborhood to the global community at large.

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ICAPA

- 4. The Faculty are Central:
  - The commitment and quality of the faculty (and/or trainers) is central to the achievement of program goals in all areas of activities. Consequently, there must be, in degree granting programs, a full time core faculty committed to the highest standards of teaching, training and research and possessing the authority and responsibility appropriate to accepted standards of faculty program governance.

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NASPAA

- Application, self-evaluation report, site visit

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NASPAA

- Standard 3: Matching Operations with the Mission: Faculty Performance
  - Program faculty members will produce scholarship and engage in professional and community service activities outside of the university appropriate to the program's mission, stage of their careers, and the expectations of their university.

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EAPAA

- Application, self-evaluation report, site visit.

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EAPAA

- 5.4 Relation to Practice and Internships
  - The Public Administration programme provides adequate training of practical skills in correspondence with the mission and the programme objectives. Therefore it has adequate links to the public administration profession

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EAPAA

- 5.9.2 Faculty qualifications
  - A sufficient number of the staff is actively involved in public administration research activities:
    - Present a short overview of the research programme(s) the core faculty is/was involved in during the last 4 years. Especially present international and national interuniversity research projects.
    - Present a list of scientific publications (books and articles in journals) in foreign languages of your core faculty published during the last 4 years.
    - Present a list of scientific publications (books and articles in journals) in your home language of your core faculty published during the last 2 years.
    - Present evidence of the experience and/or involvement of your core faculty in relevant public administration practice.

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Questions and tasks for participants

- What is your position – which approach to prefer: more detailed focus on impacts (AACBS) or more general approach (NASPAA)?
- Your own real problems connected with research impact measurement?
- Research impact and academic ethics – examples of pros and cons of heavy focus on the research impact.
- Try to assess research impact of your faculty/programme/department using AACBS guidelines.

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Defining Criteria for Assessing Research Impact in Developing Countries

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

August 27, 2018, Chonburi, Thailand

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REPESEA

Challenges Facing Developing Countries: Indonesian Context

- Corruption
- Persisting poverty
- Infrastructure
- Bad policies
- Adverse impact of external aids
- Social conflict
- Inequality in access to health care
- Inequality in access to quality education
- Availability of decent work

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School's Mission – Research Alignment

- A school's mission specifies its targeted society.

- A school articulates and executes its mission through research activities and impacts that makes a difference to targeted society.

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Validity of Research Impact Criteria

- Criteria of research impact should capture the the success of a research or a research center in making difference to the targeted society.

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Challenges facing Research Centers in Developing Countries

- Research centers in developing countries are experiencing pressure in addressing practical and existing problems with very limited resources and capabilities.

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Issues Related to Research Impact Criteria and Measurement

- Contribution to theory vs. contribution to practice
- Theory and academic rigor vs. practical relevance
- Published vs. not published
- Broad impact vs. narrow impact
- Long-term impact vs. short-term impact
- Comparability vs. customization
- Quantitative measure vs. qualitative measure
- Institutional/school level vs. individual level

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Contribution to Theory vs. Contribution to Practice
Theory and Academic Rigor vs. Practical Relevance

- A research contributing to theory is more problem oriented than problem solving.
- Sometimes practical relevance sacrifices academic rigor due to time constraint and limited budget.
- Only few practitioners can understand the importance of academic rigor in research. They value more on practical relevance.

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Published vs. Unpublished Research

- It is difficult for practical research to be published in reputable peer-reviewed academic journals due to its low or insignificant contribution to theory development and lack of academic rigor.

- Many practical researches are commissioned researches, which are dedicated to narrow-practitioners, therefore cannot be published due to confidential reason.

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Broad Scope vs. Narrow Scope of Research

- A research with a broader scope is not necessarily more impactful than that with a narrow scope.

- However, peer-reviewed academic journals prefer research with a broader scope because of its generalizability of research results.

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Long-Term Impact vs. Short-Term Impact of Research

- Some researches have long-term impacts that are more difficult to identify and to measure than those having short-term impact.

- Constraining research to deliver short-term impact will affect the relevance and quality of the research.

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Comparability vs. Customization of Research Impact Criteria

- A school's mission is unique as well as its research direction.
- Due to its unique research direction, a school's research impact cannot always be comparable to other schools' research impact.
- Pursuing comparability of research impact criteria may sacrifice a school's research relevance to its targeted society.

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Quantitative Measure vs. Qualitative Measure of Research Impact

- Quantitative measure will enable us to make comparison. Nevertheless, quantitative measure cannot identify uniqueness of a school's research impact.

- Qualitative measure relies on structured and unstructured description.

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Impact Possibilities

- Translation of research outcomes into consulting, executive education/continuing education programming, practice oriented intellectual contributions
- Participation in policy development
- Success of graduates
- Impact on professional/academic societies/practice
- Journal quality/citations
- Successful educational materials
- etc

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Impact Criteria

- Invitations by governmental or other agencies and organizations for a research center representative to serve on policy making bodies

- Sustained research center publications that are funded by external sources or that are highly recognized as authoritative sources of analysis and perspectives related to the center's core focus

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Impact Criteria

- Continued funding (e.g., number of donors, scale of donations)
- Number of web visits to research center website (e.g., tracking data from Google Analytics)
- Number of attendees (representing academics, practitioners, policymakers, etc.) at center-sponsored events

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Measuring Research Impact

- A listing of the outlets (journals, research monographs, published cases, funded and competitive research grants, scholarly presentations, invited presentations, published textbooks, other teaching materials, etc.);

- An analysis of the breadth of faculty engagement and production of intellectual contributions within each discipline;

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Measuring Research Impact

- Awards, recognition, editorships, and other forms of validation of the accomplishments of faculty through their intellectual contributions;

- The ways in which the school conveys intellectual contributions and their outcomes to external constituencies and stakeholders.

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Impact Validation

- Peer recognition of the originality, scope, and/or significance of new knowledge.
- The applicability and benefits of the new knowledge to the theory, practice, and/or teaching of business and management.
- The usefulness and/or originality of new or different understandings, applications, and insights resulting from the creative work.
- The breadth, value, and persistence of the use and impact of the creative work.

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Impact Validation

- The originality and significance of the creative work to learning, including the depth and duration of usefulness.

- Research awards and recognition (e.g., selection as a fellow of an academic society).

- Adoptions and citations of the creative work, including its impact on the creative work of others.

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Impact Validation

- Evidence in the work of leadership and team-based contributions to the advancement of knowledge.
- Alignment of the work with mission, expected outcomes, and strategies.

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REPESEA

Research Impact the Development of the Country

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities
27th August 2018, Auditorium (IC 203), 2nd floors, International College, Burapha University

Assistant Professor Dr.Pornrat Sadangharn
Burapha University

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REPESEA

The most difficult part of doing research is….

A. Thinking of the research topic
B. Research design
C. Data collection
D. Data analysis
E. All are correct!

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What is your funding source of doing research?

A. You own budget
B. University
C. Government agencies
D. Companies
E. Erasmus!

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An Elderly Employment for the Thai Automotive Industry (2013-2015)

- Aging society
- Human capital
- Lesson-learned from aging countries
- Thai automotive industry
- Research gap

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Research Objective

Developing and confirming
an elderly employment model
for the Thai automotive industry

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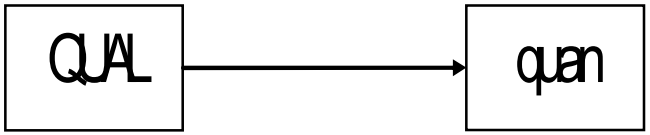
Research Design (1)



QUAL Data Collection	QUAL Data Analysis	quan Data Collection	quan Data Analysis	Interpretation of Entire Analysis

A mixed-method was utilized in this research by employing a sequential exploratory strategy.

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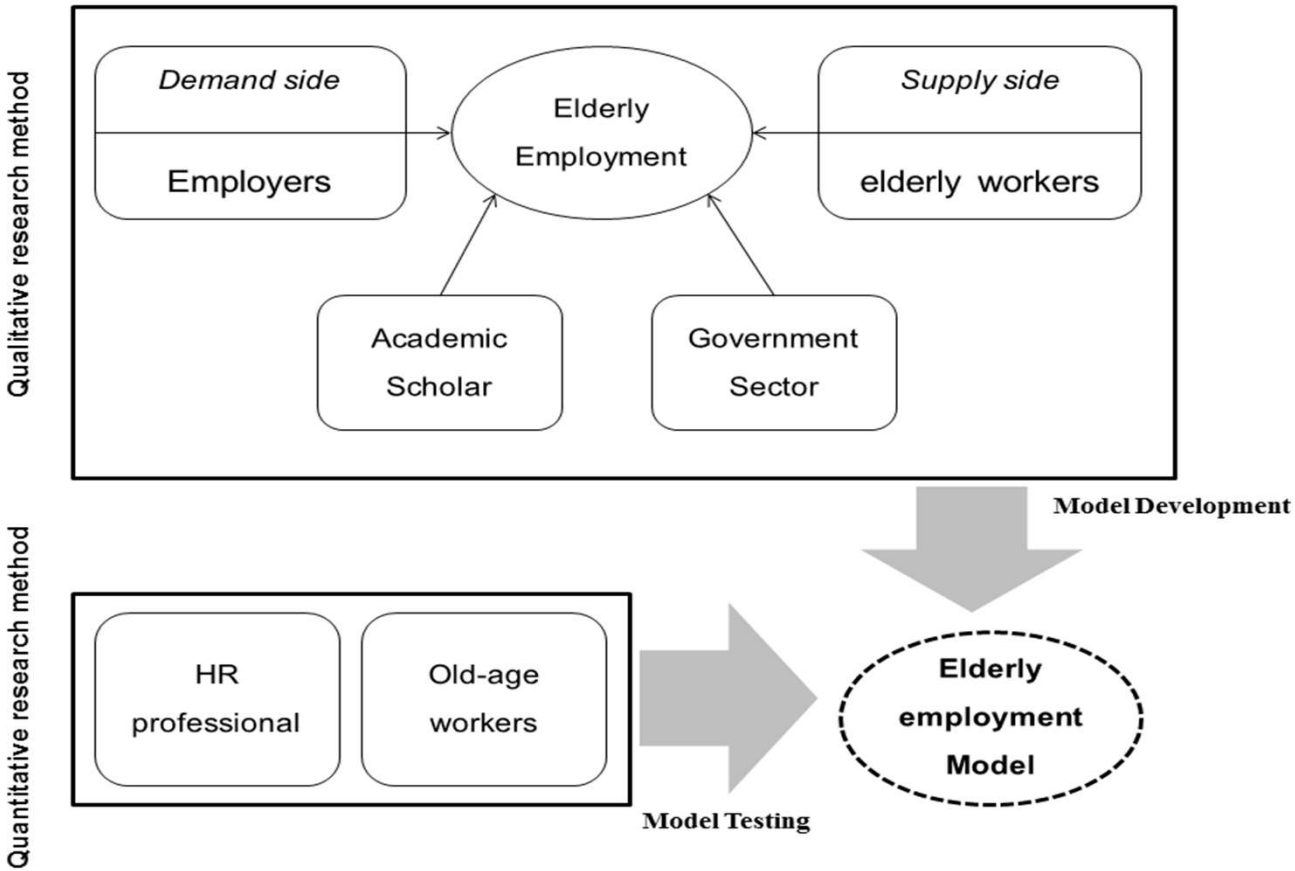
Research Design (2)



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Research Design (3)

Qualitative Research

1. Constructive methodology
2. Grounded theory strategy
3. Key informants: 4 groups of stakeholders
4. Theoretical sampling method and then snowballing
5. Using inter
6. Analyzing by Glaserian approach

Quantitative Research

1. Survey
2. Population: HR managers and elderly workers
3. Using questionnaire
4. Analyzing by descriptive statistics and CFA

Instrumental development approach

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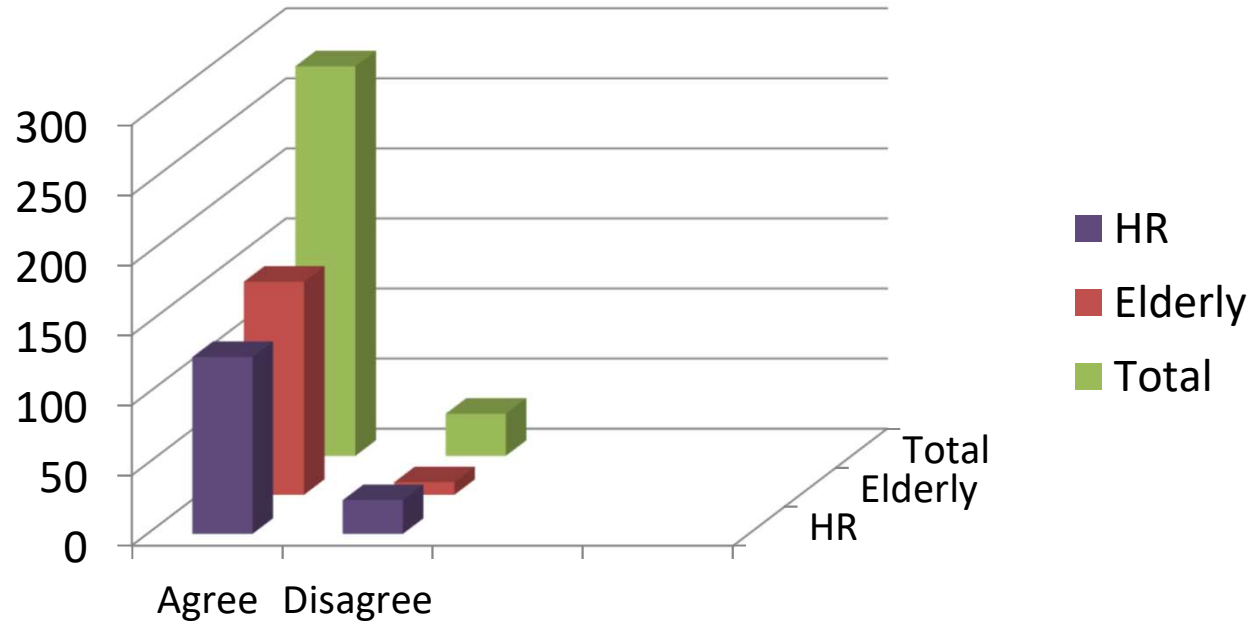
Research Result (1)

Almost of key informants agree with the elderly employment



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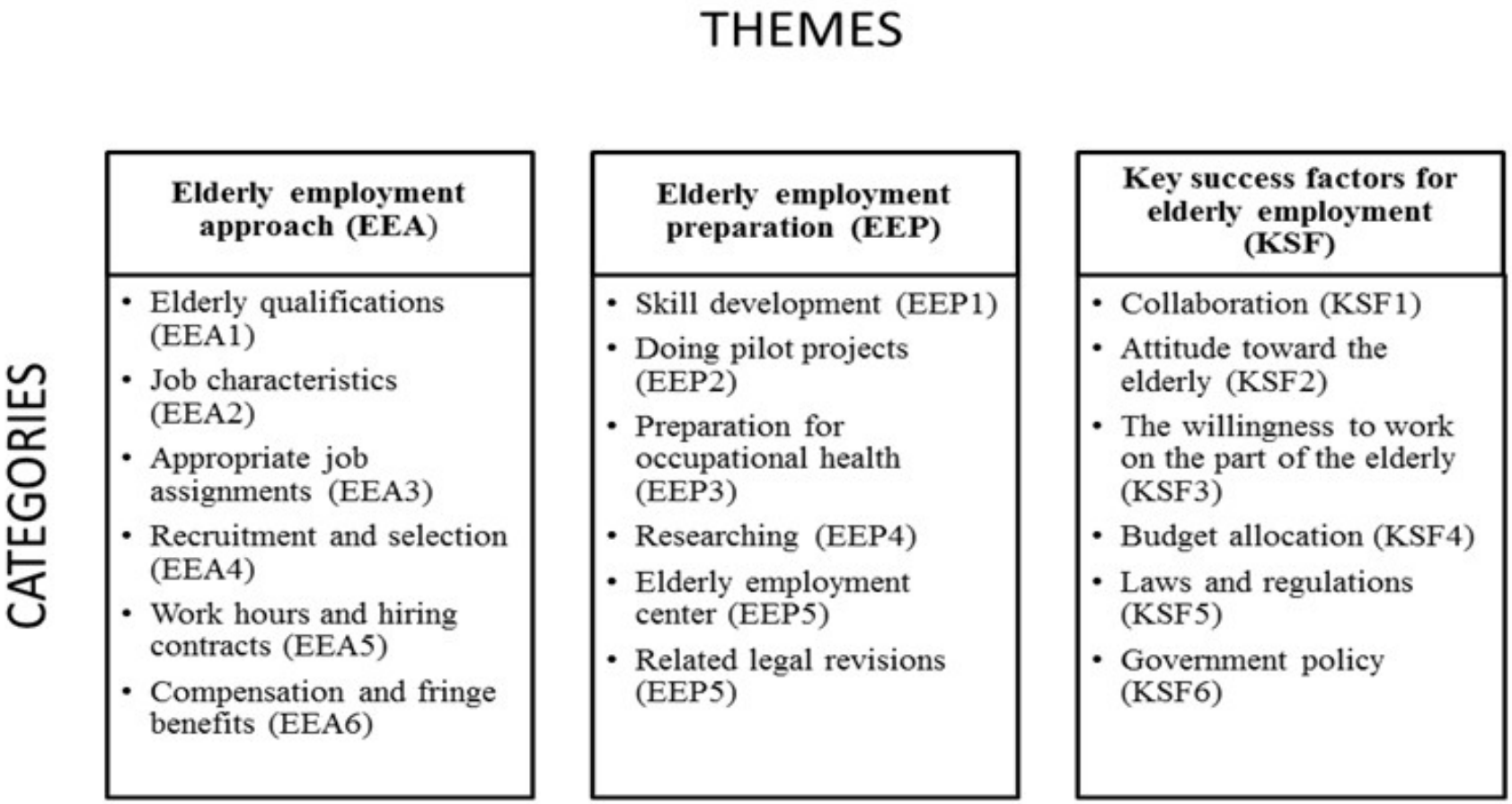
Research Result (2)



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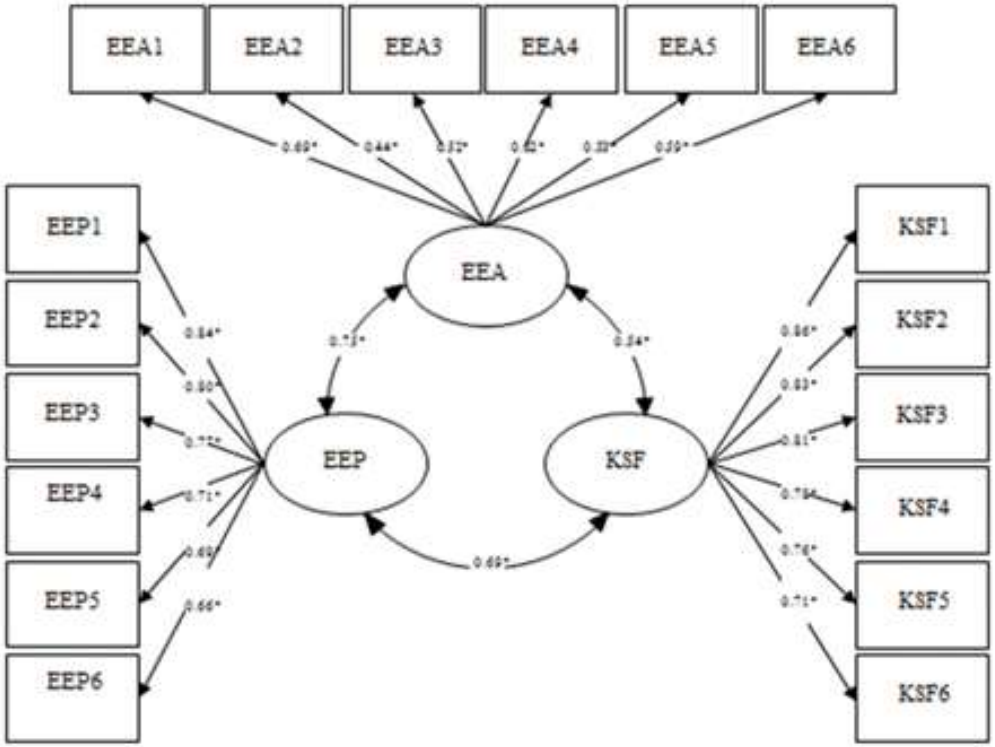
Research Result (3)



$\chi^2 = 104.93$ df = 97 p = 0.27 RMSEA = 0.01 GFI = 0.97 AGFI = 0.93 CFI = 1.00
*p<0.05

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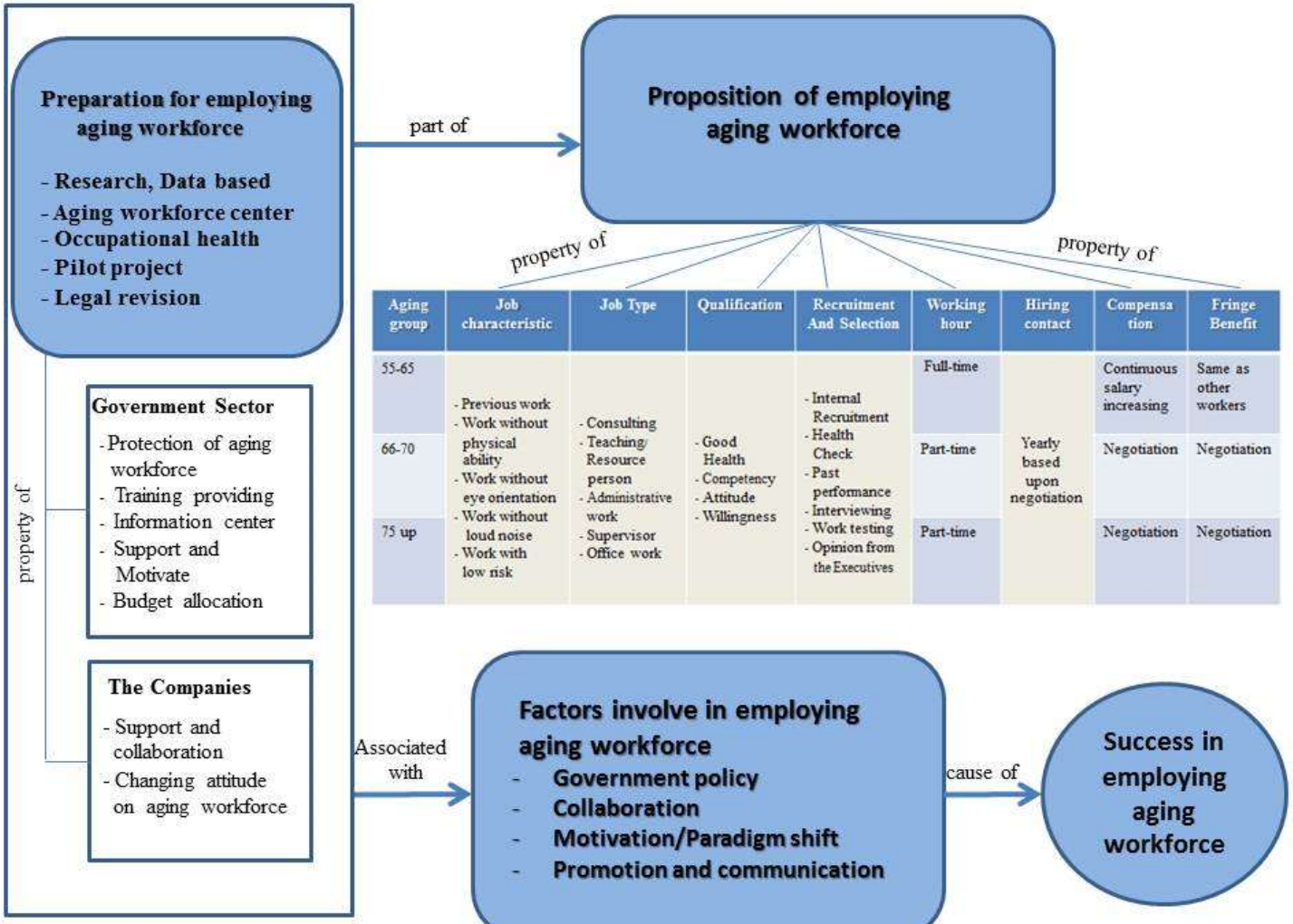
Research Result (4)



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Conclusion

Elderly employment varies from case to case and should be considered on an individual basis with the agreement of employers and elderly employees.

Re-designing HR practices for elderly employment is recommended.

Occupational safety and health must be prepared.

Information should be disseminated concerning elderly employment to promote a positive attitude towards elderly employees.

Collaboration between the government and automotive companies is a key success factor for elderly employment

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Research Impact the Development of the Country

Academic Perspective

- The final report was sent to government sector. The parliament also obtained a report and invited me to disseminate the research result via the parliament radio. Similarly, the TRF also invited me to disseminate the research result via the television program on 12 July 2017.

- As the law of extension the retirement age will be announced in the near future. I was invited to inform those in the industrial sector to understand the research result. That was done on 25 July 2017.

- A number of companies asked for a copy of this research as a guideline in considering the elderly employment in their companies.

- Four papers concerning this research result were published. Two of them were in English while another 2 papers were in Thai.

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Research Impact the Development of the Country

Policy Perspective

- Government sector realize the value of the elderly. Concerned laws and regulations are revised. Government agencies can use this research result as a part of information when empirical data is needed. This research was embedded as a research data based in the Ministry of Labor website. Therefore, those who require this kind of data can retrieve the research result directly.

- Companies, especially in the Eastern Industrial Estate, can use this research result as empirical evidence in their elderly employment policy. Currently, the copy of this research was sent to many companies. The center of data provider is the Department of Labor protection and Welfare, Chonburi province. Thus, it shows that the research report is used by the public sector and companies.

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Research Impact the Development of the Country

Social Perspective

- Decrease the age discrimination in employment. Elderly workers have a right to work longer.
- Elderly employees who need economic income have a choice to resume their work. This will assist their life in the long-run. It is also reduce the burden of their family since the elderly employees still have monthly salary so that they can look after their own life by themselves.
- It is Thai culture that values the seniority in the society. The employment of old-age employees can reflect the respective of the seniority by value them as a resource person of the companies. This recognition of elderly potential will encourage their human dignity.

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Research Impact the Development of the Country

Economic and Human Capital Perspective

- Reduce the impact of labor shortage and encourage the utilization of old- age human capital in the automotive industry.
- Maintain the competitive advantage of the automotive companies by further employing the old-age human capital.
- Employing old-age employee can be seen as a part of knowledge management (KM) in the companies since it will encourage the knowledge transfer from one generation to other generations.

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Other research projects

Elderly employment series
- Occupational Health in Elderly Employment
- Elderly Employment in the Hotel Business

Robot
- Human Resource Management for Collaborative Working between Service Robots and Hotels' employee in Eastern Economic Corridor

Startup Business
- Causal Factors influencing Startup Entrepreneurial Decision-making of Generation Y in the Eastern Economic Corridor

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Approach of making my research impact the development of the country

- World Trend
- Country Context
- Area Based
- Matching all of that with my preference!

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Measuring the impact of academic research in the UK: Lessons Learnt

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

August 31st, NIDA, Bangkok, Thailand

Alistair Hunt, John Hudson
University of Bath

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Purpose of Training Module

Outline: This training will give an overview of recent UK experience in the practice of evaluating research impact. It will highlight what has worked well and not-so-well and identify the lessons for transferability internationally. To illustrate we will use case studies, and draw parallels with the experience and hopes of the workshop participants.

Biography: Dr Alistair Hunt is a Lecturer in Environmental Economics at the University of Bath, UK. Prior to this, he worked in the UK Department of Environment as a Government Economist. Alistair's current research is mainly empirical and focuses primarily on climate change and air quality, and is therefore very much concerned with generating impact with regulatory authorities as well as the wider public.

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Research Impact is not new!

The University of al-Qarawiyyin,
Fez, Morocco, 859

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University of Santo Tomas, Philippines, 1611

University of Oxford, UK, 1094

University of Harvard, USA, 1636

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Overview of Training Module

- Introduction to UK Context
  - What is Research Impact?
  - Why is it important?
  - History of Evaluation
- Measuring Research Impact
  - Academic: publications
  - Non-academic: engaging wider audiences
- Lessons learnt & way forward

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What is Research Impact? How is it defined in UK?

Higher Education Funding Council for England (HEFCE) defines impact 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**.

More simply, Research Councils UK defines research impact as the **demonstrable contribution that excellent research makes to society and the economy**.

Key aspect of this definition is that impact must be demonstrable.

It is not enough just to focus on activities and outputs that promote research impact, such as staging a conference or publishing a report.

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What is Research Impact? How is it defined in UK?

- Impacts may occur in the immediate or long-term future, and there can be challenges tracking and attributing impacts
  - E.g. Einstein (1905) paper, establishing $E=MC^2$:
    - 1945 - Hiroshima bomb?
    - 2015 - 75% of electricity in France is from nuclear power

- Impacts occur through processes of knowledge exchange and the co-production of knowledge, where new ideas are developed in relationship with the people who will put those ideas into practice.
  - Can be an advantage of researcher responding to needs specified by funder

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Why is research impact important?

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Why is Research Impact Important in UK?

- Government
  - Justifies spending on university sector, relative to health, defence, etc.
  - “Soft” influence in international relations
- Universities
  - Visibility in public life – justifies existence to tax-payer/funder
  - Measure of value-for-money
- Academics
  - Enhances case for being given a job
  - Enhances case for promotion
  - Validates the worth of the academic – desire to contribute to society

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Evaluating Research Productivity in the UK

- The UK has probably progressed further along the line of evaluating research productivity than any other country.

- The UK's 2014 research Excellence Framework (REF) - latest in a series of exercises seeking to evaluate quality of research done in UK universities across 36 subjects. Continues a series of such exercises which began in the 1980s. The next REF is scheduled for 2021.

- An innovation in REF2014 was the provision for (non-academic) impact of academic research, as a measure of research quality.

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Research Impact: Academic

- Primarily by publications – books, journal articles
- Key criterion: novelty – originality, value to the academic discipline
- But how to measure?

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Research Impact: Non-Academic

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Question 1:
What are the possible types of non-academic impacts
- of your research?
- of others in your university

Question 2:
Are you likely to need support in order to produce this impact?

If so, what type of support would you need?

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Examples of types of Potential Non-Academic Research Impact

Specific examples in REF guidance included:

(i) a spin-out business

(ii) informing policy decisions or changes to legislation, regulations or guidelines

(iii) informing the awareness, attitudes or understanding of the public

(iv) a new drug, treatment or therapy that has been developed, trialled with patients, or adopted

(v) improving the quality of life in a developed or developing country by new products or processes and;

(vi) changing the management of an environmental risk or hazard.

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Research Impact: Non-Academic

- The counterfactual is a critical concept.
- i.e. what would have happened if the research did not exist
- Scope of direct economic impacts - easily quantifiable
  - greater wealth,
  - cheaper prices and
  - more revenue
- Less easily quantifiable in monetary terms
  - effects on public health,
  - the environment,
  - the quality of life (QOL).

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Measurement of Research Impact

Possible methods to measure (De Campos (2010)):

(i) case studies

- offer a detailed view of how and why processes occur, and are useful in evaluating social, cultural, policy, and practice impacts
- But danger they focus on successful, rather than unsuccessful, research

(ii) surveys

- expert testimony
- But need to interview all relevant people

(iii) quantitative approaches

- e.g. returns on investment
- But only applicable to commercialised research

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Challenges to Assessing Research Impacts

- Tendency for researchers and research funders to overestimate, or at least overstate, the likely short- and medium-term impact of research
- Research can have direct as well as indirect economic effects. Moreover, as the world is becoming a small nexus of interconnecting research entities it is particularly difficult to attribute domestic economic impacts to only domestic research outcome.
- Time lag between research undertaken and the realization of impact can be variable and often lengthy

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Research Impact: Non-Academic (UK)

Difficulties in producing reliable measures → UK REF uses case study approach

- Avoids quantitative advantages of some types of impact e.g. patents
- *Impact case studies should not be narrowly interpreted, need not solely focus on socio-economic impacts but should also include impact on government policy, on public engagement and understanding, on cultural life, on academic impacts outside the field, and impacts on teaching. Stern Report (2016).*
- *Impact must be based on research of demonstrable quality. Stern Report (2016).*

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Research Impact: Non-Academic (UK)

5 sections to each REF case study:
(i) a summary,
(ii) a description of the underpinning research
(iii) the references,
(iv) the impact and
(v) corroborating evidence for this impact.

Examples of impact may include effects on, changes or benefits to the

activity, attitude, awareness, behaviour, capacity, opportunity, performance, policy, practice, process or understanding

of an audience, beneficiary, community, constituency, organisation or individuals.

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Impact Case Studies – early examples

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Case Study Subject	Gains claimed
Therapeutic intervention in patients with neonatal diabetes	???
Reduction of recurrent stroke risk by early intervention	???
Large semi-conductor crystals for medical and security imaging	???
Development of tourist attraction based on astronomy	???
Nano-magnetism and anti-counterfeiting	???
Techniques for extensive environmental monitoring	???
Developing methods to detect irradiated foods	???
Child support research and policy impacts	???
Henry VIII at Hampton Court Palace	???
Public understanding of poetry	???

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Impact Case Studies – early examples

Case Study Subject	Gains claimed
Therapeutic intervention in patients with neonatal diabetes	Health
Reduction of recurrent stroke risk by early intervention	NHS cost savings, health
Large semi-conductor crystals for medical and security imaging	Revenue (spin-out company), medical, space, security
Development of tourist attraction based on astronomy	Revenue & local tourist impact, public engagement
Nano-magnetism and anti-counterfeiting	Revenue, employment (spin-out company), industrial & consumer safety, crime reduction
Techniques for extensive environmental monitoring	Spin-out company, patents
Developing methods to detect irradiated foods	Consumer safety
Child support research and policy impacts	Public cost savings; reduction in conflict between separated parents
Henry VIII at Hampton Court Palace	Tourism revenue, public engagement
Public understanding of poetry	Public engagement

Impact Case Studies – early examples

- No attempts to put overall monetary value on impacts
- Medical studies – patents (revenues) + health benefits

E.g. Cardiff research facilitated identification/characterization of genes for major inherited disorders. New genetic tests which allow earlier/more accurate diagnosis now available in the UK and Europe. In US, testing kit which uses MYH gene technology, generated > £100,000 in royalty income for Cardiff University.

- Physics case studies - spin-out companies. Benefits include revenue, employment, and context-specific benefits such as health and security.

e.g. Durham's research on vapour growth of semiconductor compounds → patented breakthrough with uses in energy-sensitive X-ray detectors and thermal imaging. The process commercialized by spin-out company which employs 60 people.

Incorporated detector technology into medical imaging products and security systems for screening liquids and gels at airports, helping to reduce current restrictions on carry-on baggage and duty-free goods.

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Impact Case Studies – early examples

Impact of the social work and social policy (SWSP) case studies are focused more on policy, although cost savings are also emphasized.

But, surprisingly, there is little on public engagement.

One problem with the SWSP studies is that this research is part of a substantial body of research which will be impacting on the different decision makers. But not generally emphasized.

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Example Case Study – REF 2014

1. **Summary of the impact (indicative maximum 100 words)**

Professor Paul Grout has had a significant impact on national policy on the delivery of public services by the private sector in the last five years.

His research undertaken at the University of Bristol on private provision by regulated utility companies and public private partnerships, using both economic theory and empirical studies, paved the way for his central involvement in, and directly informed, key regulatory decisions.

These decisions impact materially on almost every individual and organisation in the UK. His research also directly led to his appointment in 2012 to the Board of Ofgem (the Gas and Electricity Markets Authority), the UK energy regulator.

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Example Case Study – REF 2014

2. **Underpinning research (indicative maximum 500 words)**

The underpinning research commenced in the early 1990s and is ongoing. It was carried out by Grout (Professor of Political Economy, 1986-) and colleagues at the Universities of Bristol (L. Garside, Research Assistant/Associate, 1999- , A. Jenkins, Research Assistant, 1998-2000), Oxford (Professor M. Stevens) and Bath (Professor A. Zalewska). The research can be grouped together into an examination of two overlapping areas.

(i) The regulation of private provision of public services through regulatory agencies

This research, notably but not exclusively in the area of regulation of private utility companies, gives important insights into the appropriate rate of return for regulated utilities [1]; the impact of government policies and economic and stock market 'shocks' on the risk and cost of capital of private utility companies [1]; valuation of utilities [2]; competition law appeal processes [3], and privatisation [2].

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Example Case Study – REF 2014

References to the research (indicative maximum of six references)

The high quality of the research is corroborated by the quality of the journal publications and the high amount of associated peer-reviewed competitive grant funding.

[1] Grout, P.A. and A. Zalewska (2006), The Impact of Regulation on Market Risk, Journal of
Financial Economics 80, 149-184. DOI: 10.1016/j.jfineco.2005.02.006
[2] Grout, P.A., A. Jenkins and A. Zalewska (2004), Privatisation of Utilities and the Asset Value
Problem, European Economic Review 48: 927-941. DOI: 10.1016/j.euroecorev.2003.06.003
[3] Garside, L., P.A. Grout and A. Zalewska (2013), Does experience make you tougher: Evidence from competition law, The Economic Journal 123, 474-490. DOI: 10.1111/j.1468- 0297.2012.02560.x. Listed in REF2.
[4] Grout, P.A. (2003), Public and private sector discount rates in public-private partnerships, The Economic Journal 113, C62–C68. DOI: 10.1111/1468-0297.00109
[5] Grout, P.A., and M. Stevens (2003), The Assessment: Financing and Managing Public Services, Oxford Review of Economic Policy 19(2): 215-254. DOI: 10.1093/oxrep/19.2.215
[6] Grout, P.A. (1997), The Economics of the Private Finance Initiative, Oxford Review of Economic Policy 13(4): 53-66. DOI: 10.1093/oxrep/13.4.53

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Details of the impact (indicative maximum 750 words)

The main pathways to impact were through Grout's central involvement in Ofgem's key decisions and through his advisory role to various government agencies.

4.1 Impact through Ofgem

Amongst many other activities, Ofgem sets the prices (allowed revenues) that electricity and gas transmission companies (e.g., National Grid), and the gas and electricity network operators can charge. Professor Grout's research into private delivery of public services, including his research into the interaction of regulation and the cost of capital of regulated companies, impacts directly on the appropriate allowed revenues of regulated companies. This research and his analysis of optimal structures of delivery by the public sector led him to be appointed as the sole special advisor of the key regulatory committees of the Ofgem Board (since 2008), and to the Board of Ofgem in 2012.

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Example Case Study – REF 2014

5. **Sources to corroborate the impact** (indicative maximum of 10 references)

[a] Factual statement, Chief Executive, Ofgem

[b] Chairman of the Board of Ofgem (Gas and Electricity Markets Authority), and Annual Assessment (2012-13) of Ofgem Non-Executive Board members for Secretary of State for Energy and Climate Change.

[c] Ofgem: RIIO GD1 Final Proposals Overview, 17 December 2012.

[d] Ofgem: RIIO T1 Final proposals for National Grid Electricity Transmission and National Grid Gas, 17 December 2012.

[e] Ofgem: RIIO T1 Final proposals for SP Transmission and Scottish Hydro Electric Transmission ltd, 23 April 2012.

[f] Ofgem calculation, Regulatory Finance and Compliance (letter).

[g] Public Accounts Committee – Twentieth Report: Department of Energy and Climate Change Offshore electricity transmission - a new model for infrastructure, 14 January 2013.

[h] House of Lords Select Committee on Economic Affairs. 1st Report of Session 2009-2010 'Private finance projects and off balance sheet debt', 17 March 2010.

[i] 'Government Response to Private Finance Projects and off balance sheet debt', HL Paper 114, April 2010.

[j] Department for Business, Enterprise and Regulatory Reform, Public Services Industry Review, July 2008.

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What matters...

- Having actual impact from 2*research (preferably far-reaching and significant)
- Being able to articulate that impact
- Being able to evidence the impact
- Writing well: a coherent, easy to read narrative

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REF case study:
A story in four pages

- There was a PROBLEM (preferably a big one)
- Research HERE aimed to solve the problem
- The problem was solved ('significance')
- The benefit spread nationally and internationally ('reach')

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General observations: what does good look like?

- Able to articulate the impacts and explain the link between the research and impact*.
- Quality of narrative: coherently explains the links in the impact story.
- Offers a convincing account of why the research matters beyond academia.
- Reach and significance: is demonstrated throughout the narrative, put into context and not over claimed.
- Uses the evidence to illustrate the impact claim.
- Clear presentation style (possibly sub-headings, referencing system for evidence sources etc.)
- Light on technical language

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Writing an Impact Case Study – lessons learnt

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7 essential elements

Elements 1:
Articulate the impacts of the research

Element 2:
Establish the narrative: what story do you want to tell?

Element 3:
Explain why the impact is important

Element 4: Reach and significance: weaved into the detail

Element 5:
Incorporate the evidence to illustrate the impacts

Element 6:
Explain the journey from research to impact

Element 7:
Seek feedback: is the writing straightforward and persuasive?

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Writing an Impact Case Study – lessons learnt

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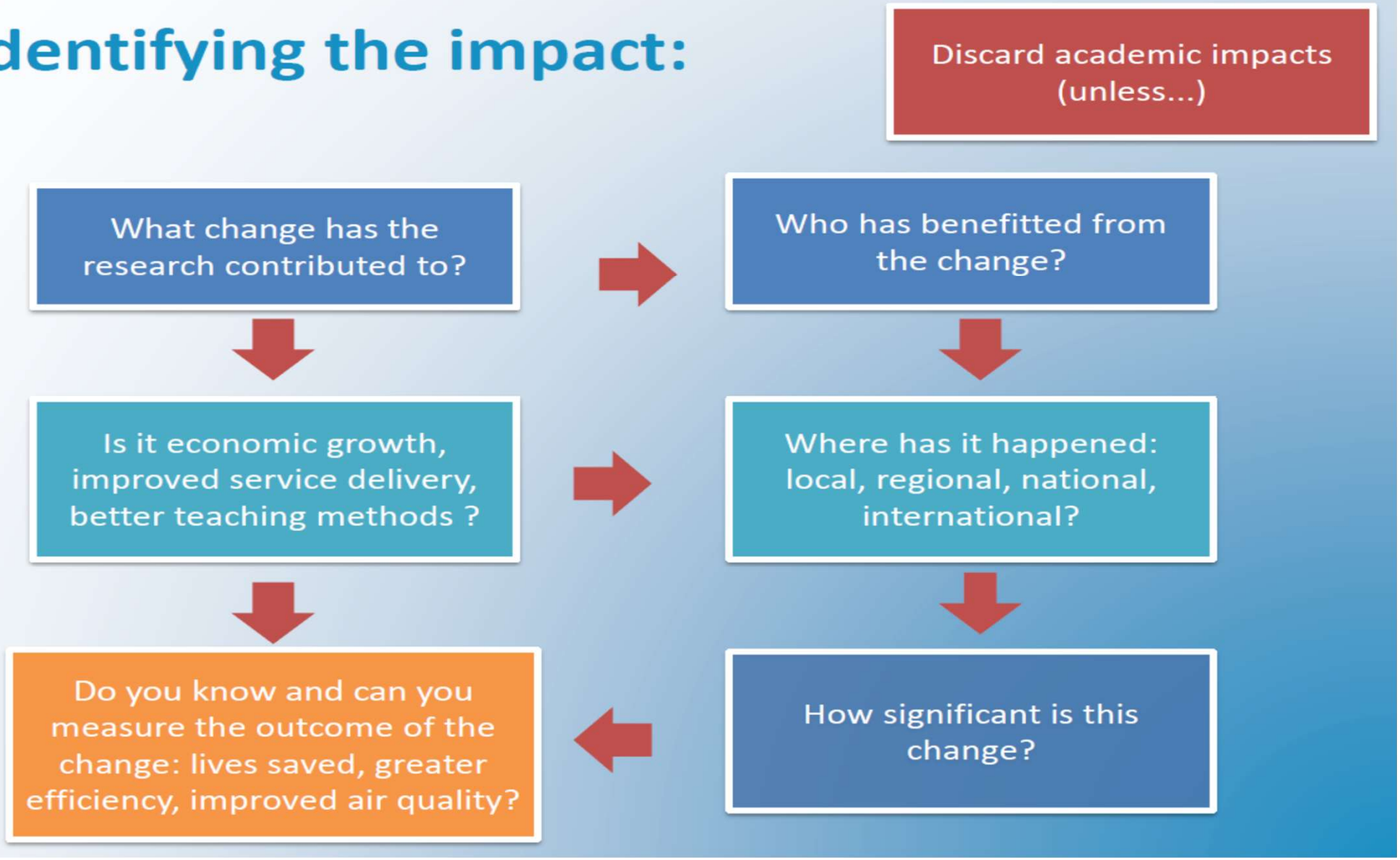
Identifying the impact:



Writing an Impact Case Study – lessons learnt

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- **Details matter, use them throughout**

Red Dust Road	Newcastle (UoA 29)
Impact claimed	Public discourse surrounding issues of identity and adoption
Reach and Sig	Appeared 16 times on BBC national radio between 2008-13; offers quote from Guardian columnist; cites two adoption websites (one in USA) that recommend the book and use quotes from their reviews of book.
Evidence	Attributed quotes from different sources incorporated into body of section 4 (including fan letters)

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Writing an Impact Case Study – lessons learnt

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- **Include novel detail**

Motion Blur	Bournemouth (UoA 36)
Impact claimed	Contributed to the commercial success of Pixar's PRman rendering software
Reach and Sig	PRman is used to produce all Pixar films as well as being sold commercially to other animation and digital effect companies...PRman has been used by 47 out of 53 nominees for Visual Effects Oscars.
Evidence	Testimonial from PRman director plus indep[illegible]ent sources on value of animation industry and us[illegible] Pixar's software.

Using this detail about the number of Oscar nominated films that used the technology is a nice way of illustrating the significance.

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Writing an Impact Case Study – lessons learnt

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Examples of Evidence used in REF2014

- Media debate
- Audience reaction or feedback (from surveys)
- Independent evaluative reports
- Quantitative data relating economic benefits (% increase in visitor numbers)
- Jobs created
- Audience figures (including viewer and listeners) Visitor statistics
- Measures of improved welfare
- Parliamentary records of expert testimony
- Inclusion in training materials
- Google analytics from websites
- Media/ blog/ Twitter commentary as evidence of public debate/discourse
- Reactions of individual participants
- Reviews: event, play, exhibition etc.
- Written testimonials from partners or organisations impacted upon
- Taskforce recommendations that cite research

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Question 2:
Are you likely to need support in order to produce this impact?

If so, what type of support would you need?

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University of Bath Web-page

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Top Tips for Impact

PLAN for impact in your research design	**ENGAGE** non-academic stakeholders in your research	**EVIDENCE** your impact as you go
• Plan for impact at an early stage of your research design	• Identify your stakeholders/ audiences and think about why they might want to engage with you	• Keep documents that show how people have engaged with, and benefited from, your research
• Remember that in your grant application you can cost in impact activities	• Consider why, when and how you will engage with each group	• Work with the Press Team so they can capture your media coverage
• Consider the wide range of activities that can enhance impact (see the Impact Gateway)	• Think through what you want to happen as a result of your engagement	• Record evidence on Pure

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Lessons learnt: The importance of an entrepreneurial partner who can take the impact forward.

Gladwell: any idea epidemic depends on a small number of individuals with specific skills: ***mavens****,* ***connectors*** *and* ***salespeople****.*

Most academics are 'mavens' - ideas people.

'Connectors' are those people you know who always know someone who can help

Sales people: (e.g. science writers, knowledge brokers, your institute public relations officers and/or film-makers) to translate your work into terms that can be understood by those you want to influence.

Need to bring together all three skill groups

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Working with stakeholders

Build long-term, two-way, trusting relationships with those who will use your research and co-generate new knowledge together:

- Have two-way dialogue as equals with likely users of your research
- Build long-term relationships with the users of your research
- Work with knowledge brokers and professional facilitators
- Understand what will motivate research users to get involved
- Work with stakeholders to interpret findings and co-design communication products

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Most commonly cited impact pathways

- Publications: academic journals, policy briefs, industry publications
- Advisory roles: being asked to contribute to Government inquiries, reports, panels and committees
- Media coverage: exposure in mass media e.g. TV/radio
- Partnerships and collaborations with industry and NGOs: harness lobbying power of organisations to promote work
- Presentations to industry, the public and Government: face-to-face meetings: way to get research findings noticed and understood - audience has opportunity to question researcher
- Developing easily accessible online materials

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Next Steps?

Individual academics: Make a self-evaluation – how does your research have impact?

So, when you do research ask yourself:
- Is there any potential non-academic impact here?
- Could it be of interest to any private or public sector organization.
- If not, then is there a public engagement angle?

Benefits:
i) the academic knows the research and the impact better than anyone else.
ii) getting them to do it raises in themselves the awareness of the importance of impact.
iii) there may be an element of bias or favouritism, if done by somebody other then the individual.

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Next Steps?

University Departments:

- require that individual academics have an impact part of their web page

But note: providing support to academics will be necessary

- Provide networking events so that academics can meet local & national business people, people from other sectors, etc.

- Provide incentives through e.g. promotions, awards

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Research Impact: Academic

Metrics used to rank academic research in publications

- Number of citations – reflects value to other researchers

(Citation = quotation from, or reference to, a book, paper, or author)

- Where published – status/ranking of journal

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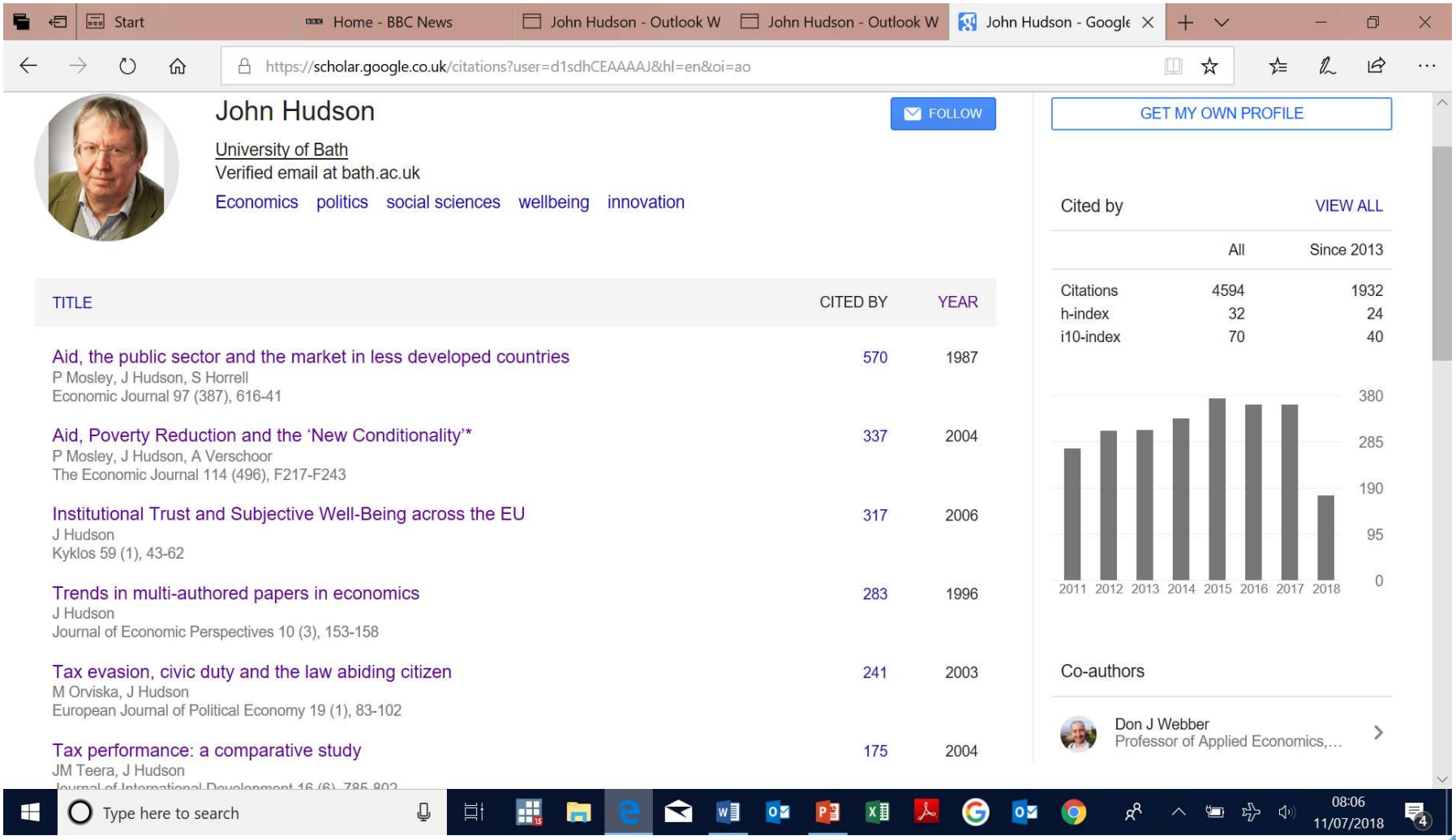
Citations – Google scholar



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Journal Ranking

UK uses grading scheme – unofficial, disputed

4* = Outstanding, international importance

3* = International importance

2* = High national importance

1* = National importance

Aim: Every academic should have 2+ articles of 3* or 4* in each 4-year review cycle

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Journal Ranking
– suggestion for other countries

- Base the ranking on a simple impact factor for the journal, which weights all citations equally or according to
  - Journal
  - no. of authors
  - author order

  – see next slide that uses Web of Science

- Alternative: Ask academics at your universities to rank – for their subject area – national & international journals together

→ Refer to annual citations if disagreements.

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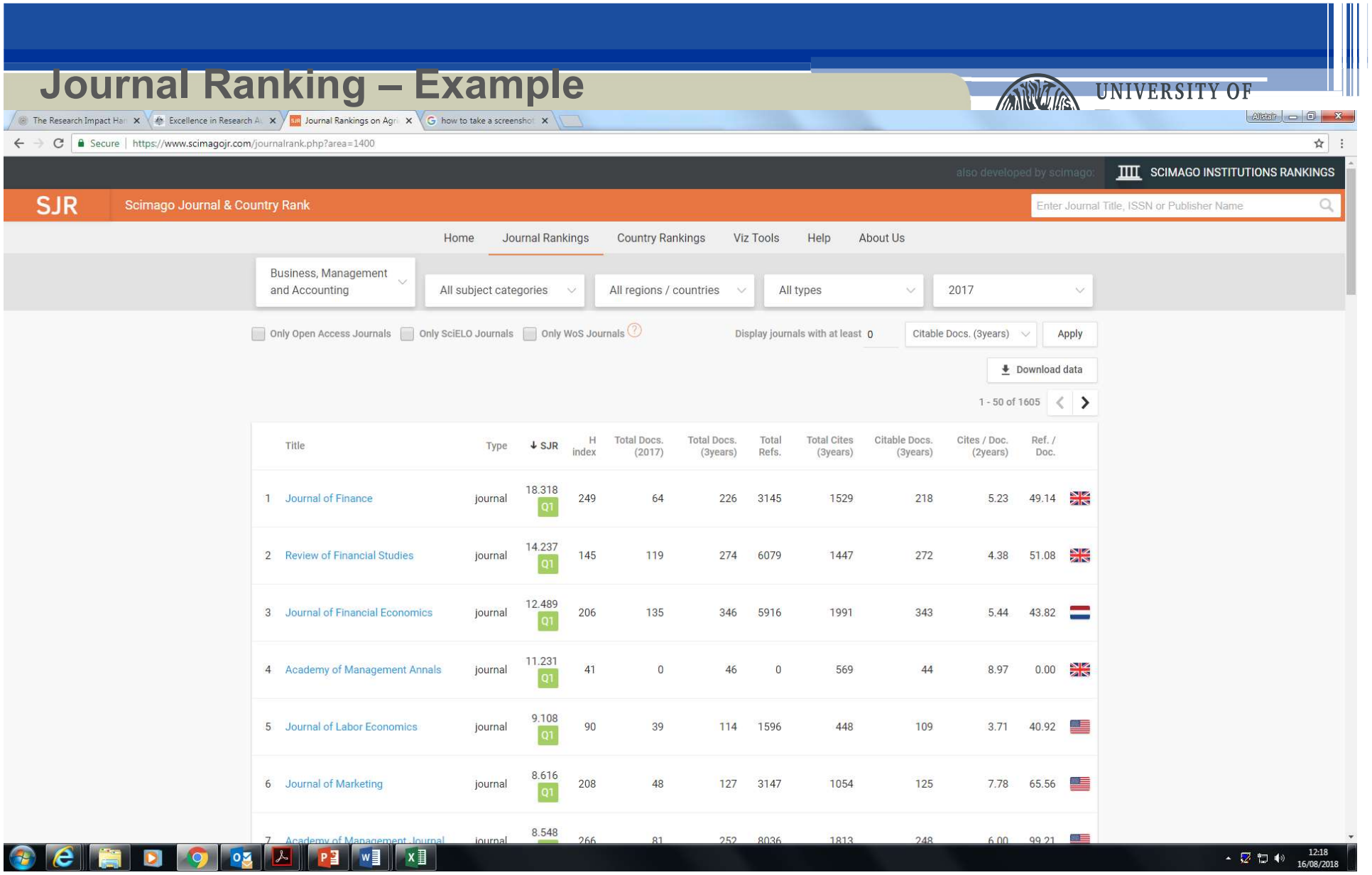
Journal Ranking – Example



	Title	Type	SJR	H index	Total Docs. (2017)	Total Docs. (3years)	Total Refs.	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc.
1	Journal of Finance	journal	18.318 Q1	249	64	226	3145	1529	218	5.23	49.14
2	Review of Financial Studies	journal	14.237 Q1	145	119	274	6079	1447	272	4.38	51.08
3	Journal of Financial Economics	journal	12.489 Q1	206	135	346	5916	1991	343	5.44	43.82
4	Academy of Management Annals	journal	11.231 Q1	41	0	46	0	569	44	8.97	0.00
5	Journal of Labor Economics	journal	9.108 Q1	90	39	114	1596	448	109	3.71	40.92
6	Journal of Marketing	journal	8.616 Q1	208	48	127	3147	1054	125	7.78	65.56
7	Academy of Management Journal	journal	8.548	266	81	252	8036	1813	248	6.00	99.21

What makes a good academic paper?

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REPESEA

Writing to maximise academic impact: Lessons learnt

- Paper must be good - well written and saying something new
  - Summarise in a couple of sentences what contribution your paper makes to the literature. What is its big idea(s)?
  - Techniques it uses must be advanced, relevant and well implemented.
  - Go to the very best journal in your field and spend some days reading through a paper, understanding every word and being able to reproduce the work yourself.
  - Choose a journal and make sure you follow their style in terms of headings, formatting of references, the abstract and diagrams. Your diagrams should be clear and self explanatory.
  - Abstract should reiterate key words from title; use common phrases from your research area to connect with other interested researchers

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Writing to maximise academic impact

- Title should be well-designed!

  Characteristics of journal paper titles in the UK REF

	Length	citat-ions	colon %	? %	Papers %	Word length
Health Sciences (A)	103	11	24.09	2.843	99.52	7.65
Public Health	112	12	58.12	6.278	99.64	7.40
Sciences (B)	89	12	17.25	1.391	99.03	7.78
Physics	77	17	14.73	1.522	99.05	7.50
Maths & Computing	69	4	13.61	0.84	86.97	7.76
Social Sciences (C)	85	5	54.29	12.40	80.07	7.33
Economics	64	2	30.41	9.35	91.79	7.47
Arts & humanities (D)	78	12	62.10	7.48	38.88	7.05
Philosophy	46	na	23.31	9.07	61.67	7.44

Notes: Columns: (i) median character length of title, (ii) median citations, (iii) % using a colon, (iv) % using question mark, (v) % of submissions that are journal papers, (vi) median word length

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Writing to maximise academic impact

	number of authors	colon	question	title mark	F length	Observations
Clinical Medicine	33.106**	12.547**	-19.58**	-31.046**		
	(15.41)	(7.20)	(4.50)	(11.36)	114.612	13128
Public Health	32.606**	-0.417	-13.563**	-25.35**		
	(11.23)	(0.16)	(3.87)	(5.82)	39.916	4718
Allied Health	13.236**	-0.694	-3.651**	-7.230**		
	(9.43)	(1.06)	(2.99)	(5.53)	66.786	9783
Psychology	25.280**	1.028	-0.423	-8.742**		
	(12.12)	(1.02)	(0.24)	(5.14)	97.592	8795
Biological Sci	23.118**	9.318**	-3.852	-30.256**		
	(11.14)	(2.94)	(1.16)	(11.44)	89.3	8347
Agriculture	17.264**	3.130*	-5.486*	-6.532**		
	(5.81)	(2.42)	(2.12)	(4.14)	26.098	3810
Earth Sys	17.716**	0.331	-4.840	-21.011**		
	(6.36)	(0.25)	(1.65)	(8.30)	49.457	5037
Chemistry	8.936**	-1.602	-4.768	-6.37**		
	(3.76)	(1.23)	(1.35)	(3.85)	80.474	4618
Physics	13.853**	15.402**	-5.053	-22.849**		
	(10.55)	(2.73)	(1.11)	(7.49)	29.369	6190
Comp Sci	11.001**	2.356	-2.136	-2.654		
	(6.81)	(1.89)	(0.88)	(1.84)	36.405	5456
Geography	14.016*	0.670	-0.653	-13.260*		
	(2.12)	(0.18)	(0.12)	(2.44)	2.038	50
Economics	5.170**	2.963**	1.980	-4.505**		
	(5.28)	(3.52)	(1.56)	(3.65)	24.005	2124
All panels	0.659**	0.114**	-0.199**	-0.555**	218.77	

Regressing citations against title characteristics:

- citations increase with number of authors
- increase with use of colon
- decline with title length
- decline if use question mark

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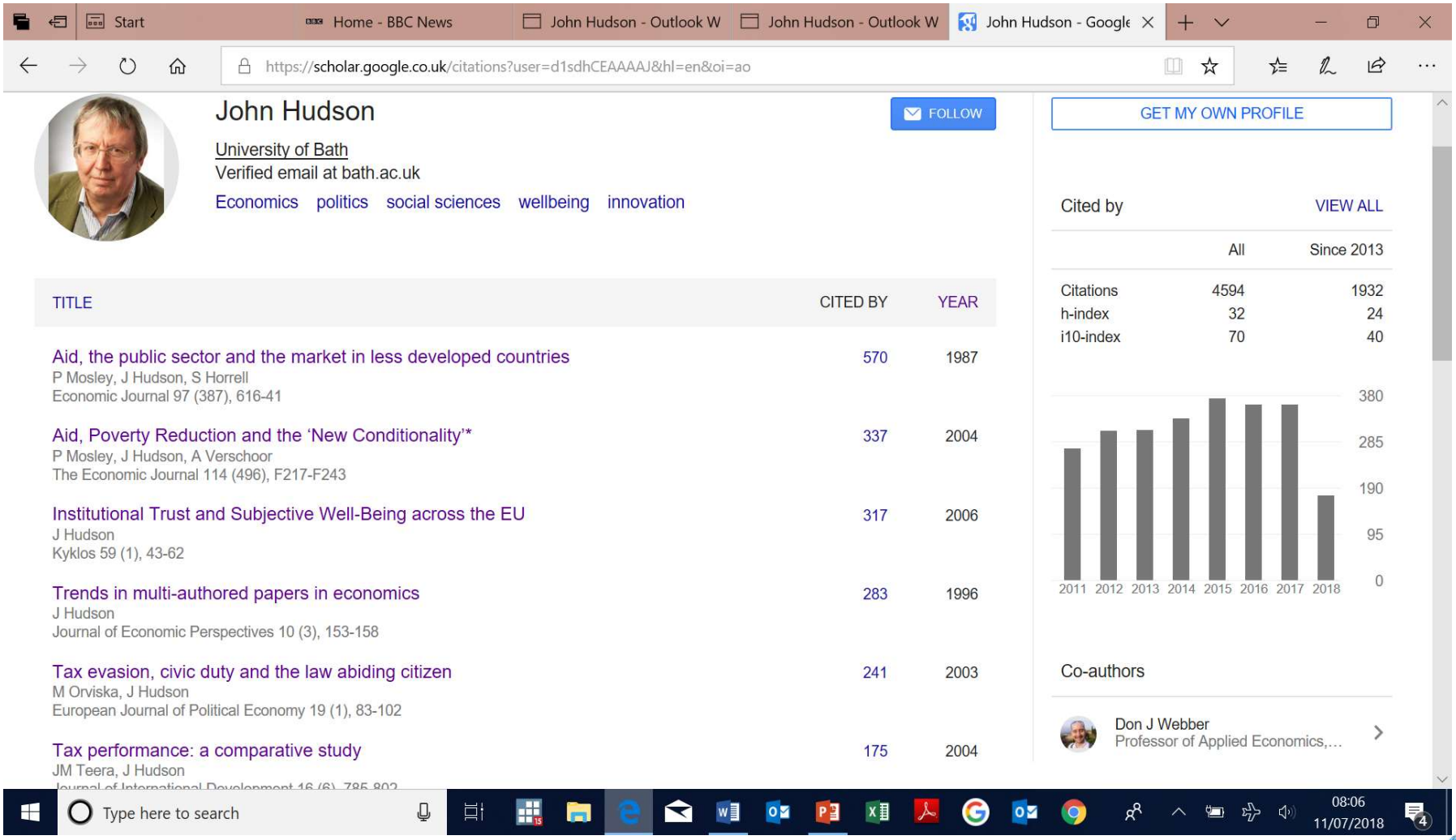
Citations – Google scholar



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Thank you!

Any questions?

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ENHANCING THE CONTRIBUTION OF ACADEMIC RESEARCH

Erasmus+ Capacity Building in Higher Education
Assessing and Improving Research Performance at South East Asian Universities

31 August 2018, National Institute of Development Administration

Adis Israngkura

School of Development Economics, NIDA

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REPESEA

Key Impact Indicators for Academic Research

- Research budget (total value or per staff or more than $x per staff)
- Number of publication
  - per staff per year (problem with high degree of skewness)
  - number of staff with at least x publications per year)
- Ranking of journal
  - The ability to answer local questions or non-journal questions?
  - Consultancy reports that provide specific solutions for government agencies?
- Citation
  - Time lag
  - Lag of research interest
- Patent or Copyright (number of patents or value of patent)
- *Social Return on Investment (extended cost benefit analysis or cost effectiveness analysis or cost saving analysis)*
- *How is research results being used in policy and planning?*

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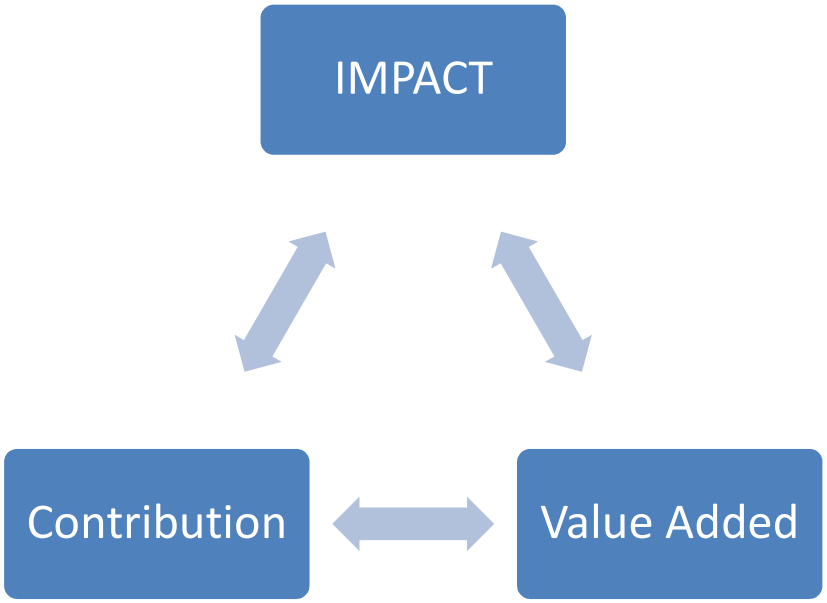
Contribution of Academic Research



Meaning of IMPACT

Policy Research (Change in GDP or budget)
- Generates better government policies
- Terminates damaging government policies

Business Research (Increase sale or save cost)
- Increase sale or profitability
- Save cost (productivity or reduce time)

Academic Research (Publication)
- Better understanding of phenomenon
- Improved methodology or tools
- Benefit to be realized in the future

Ten Commandments in Research

1. Make your research a BUSINESS CASE: Make a living from research
2. Devote time and interest in your research: SURVEY OF LITERATURE
3. Identify the SIGNIFICANCE of your RESEARCH PROBLEM: Impact
4. Ask a good RESEARCH QUESTION: Contribution or value added
5. Adopt APPROPRIATE METHODOLOGY: Scientific
6. Employ RELIABLE DATA GATHERING TECHNIQUE: Scientific
7. What is the CONTRIBUTION or value added of your research
8. Complete the FLOW OF CONCEPTS to ensure IMPACT
9. COMMUNICATE your research results effectively: SELL IT
10. Remain IMPARTIAL and maintain INTEGRITY

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1. Make your research career a BUSINESS

- Academic research is NOT just academic exercise, not a term paper nor a mere mathematical, statistical or modeling exercise.
- To create an IMPACT you must make research a BUSINESS.
- You must identify your CUSTOMERS. What are the customers problems? How your research can help create value for your customers? This is just like how you sell a product.
- DESIGN your product/research well.
- How can you ensure QUALITY CONTROL and deliver quality products?
- And, you have to put together a good MARKETTING PLAN. How you SELL your research results.

2. SURVEY OF LITERATURE

- DO NOT summarise past research
- Make literature review a STORY LINE and STOP SUMMARISING past studies.
- Show the story of how the subject matter EVOLVES.
- Provide PRODUCTIVE CRITISM of key literature.
- Identify what is MISSING and CONVINCE that this missing piece of work is VALUABLE.
- Tell a CONVINCING STORY and SELL your idea just like how you sell mobile phones.

3. My RESEARCH PROBLEM is SIGNIFICANT

- Avoide “It’s nice to know….” Avoide “Introduction…”
  but SELL and WRITE A CONVINCING STORY.
- NO research problem = NO research.
- NO research problem = NO IMACT, NO VALUE ADDED, NO CONTRIBUTION

- Research problem appear in TWO levels:
- LOSSES: *20,000 people die each year from flooding. Thailand wasted 88 billion baht each year on unproductive tourism programme. Greenhouse Gas per capita in Thailand is the highest in the world.*
- RESEARCH PROBLEM IS A LACK OF KNOWLEDGE: Not knowing which method is most effective costs lives. Not knowing which tourism programme is most suitable led to income loss. Not knowing the optimum tax rate led to dead weight loss

4. Ask a GOOD RESEARCH QUESTION

- Research questions = Hypothesis (testing whether $\beta = 0$)
- Ask a question that is not too simple nor too advanced.
- *Should Thailand invest in flood protection?* is perhaps a silly question.
- *What is the macro economic impacts (interest rate, exchange rate, employment, inflation rate, etc.) of flood protection?* is perhaps overly complicated.
- *Which is the most cost effective method to save flood victims?* is a suitable research question.

RESEARCH PROBLEM	RESEARCH PROBLEM	RESEARCH QUESTION
20,000 people die each year	Not knowing which method is most effective costs lives.	Which is the most cost effective method to save flood victims?

5. Adopt an APPROPRIATE METHODOLOGY

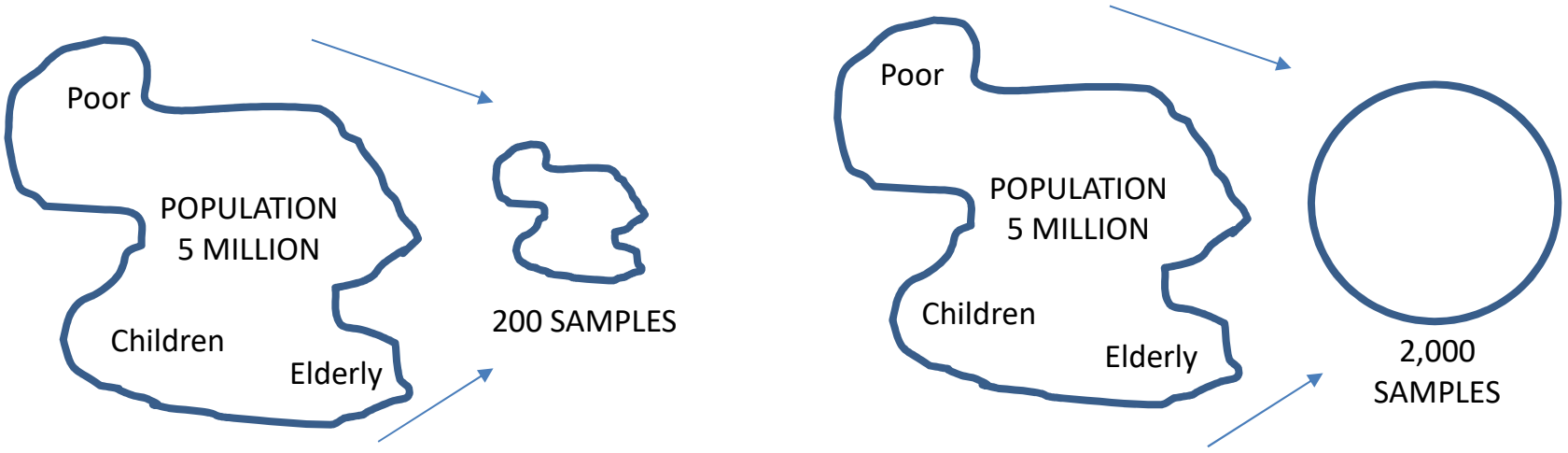
- Methodology is …how we answer the research question above.
- Pick a methodology that is SUFFICIENTLY APPROPRIATE and SCIENTIFIC

RESEARCH QUESTION	METHODOLOGY
What is the political economic future of US-Chinese trade relation?	Descriptive analysis
Welfare loss of US tax on Chinese imports?	Regression analysis
What is the impacts of Chinese capital flow?	Macroeconomic modeling

- This will establish the CREDIBILITY of your research and hence its IMPACT
- Appropriate methodology also depends on STATE OF THE ART in your field of study.

6. RELIABLE DATA

- Using RELIABLE secondary or primary data creates CREDIBILITY and IMPACT
- When use primary data and samples are used make sure the issue of REPRESENTATION is clearly discussed.
- Discuss the issue of RELIABILITY and VALIDITY.



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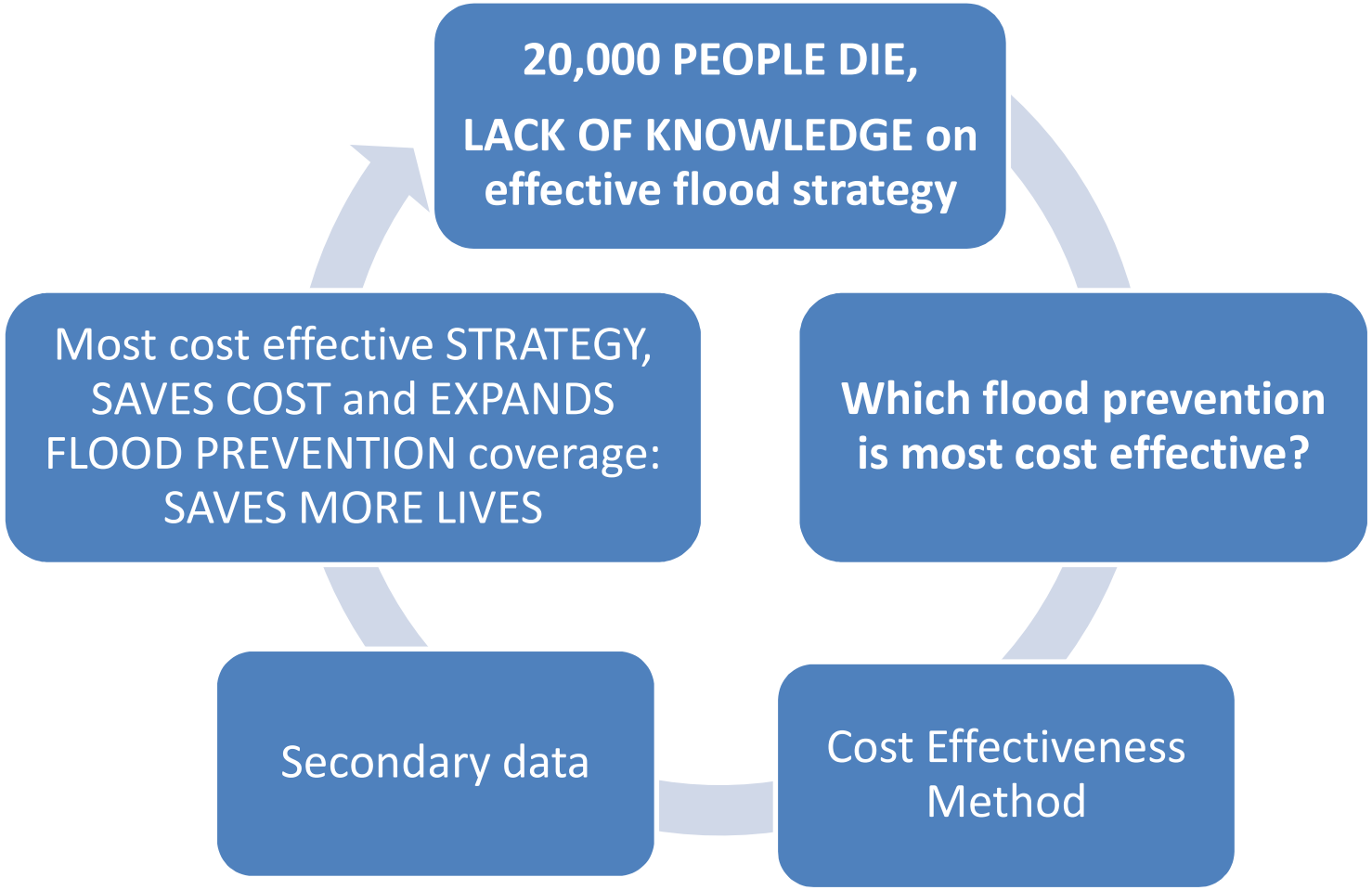
7. Spell out the CONTRIBUTION OF RESEARCH

- Don't just report the values of unknown betas, don't just say which variables are significant and which have correct signs.
- Go back to your research problem, problem statement to find the CONTRIBUTION of your research.
- The contribution, the value added or the impact of your research is the REVERSE of your problem statement.
- Weak research problem or no problem statement = WEAK IMPACT or NO IMPACT.

8. FLOW OF CONCEPTS to ensure IMPACT



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9. COMMUNICATE your results: SELL IT

- Make your research result is USER FRIENDLY and READY FOR USE.
- *"The flood prevention strategy has a Net Present Value (NPV) of USD 3,000 million…"* is weak communication.
- *"While flood prevention strategy may cost as much as USD 10,000 million, it generates many benefits, both economic and social, short term and long term. It saves as many as 20,000 lives of poor innocent victims. This generates a total benefit of USD 13,000 million and thus the country is made better off with an incremental economic value of USD 3,000 million…"* is a better communication.
- Tailor your research results according to the media: academic journal, policy brief, newspaper, social media.

10. Maintain IMPARTIALITY and INTEGRITY

- Doing research is a LIFELONG BUSINESS.
- While maintain a strong MOTIVATION, belief and interests in the subject matter, there is still a need for your research to be IMPARTIAL and the researcher maintains his/her INTEGRITY.
- AVOID bias data collection method, neglected variables in the methodology, bias interpretation of the results, and so on.
- Over time people develop faith and trust in your research, but more importantly they have faith and trust in YOU.
- If you can establish INTEGRATY of your research over a long period of time, people will LISTEN to your work and your research will have an IMPACT.

THANK YOU VERY MUCH

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