

Curricular Assessments for Sustainability in Higher Education

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Who are we, why are we here?

Curricular Assessments for Sustainability in Higher Education

1. State of the Art (Talía Stough & Kim Ceulemans)
2. Insights from Horizontal Curricular Assessment for Ethics, Responsibility, and Sustainability in Business & Economics Curricula – *KU Leuven* (Talía Stough)
3. Circular Assessment in Economics– *UGent* (Brent Bleys)
4. A screening of university programs in the Social Sciences– *UAntwerp* (Kim Boudiny)

Curricular Assessments for Sustainability

State of the Art

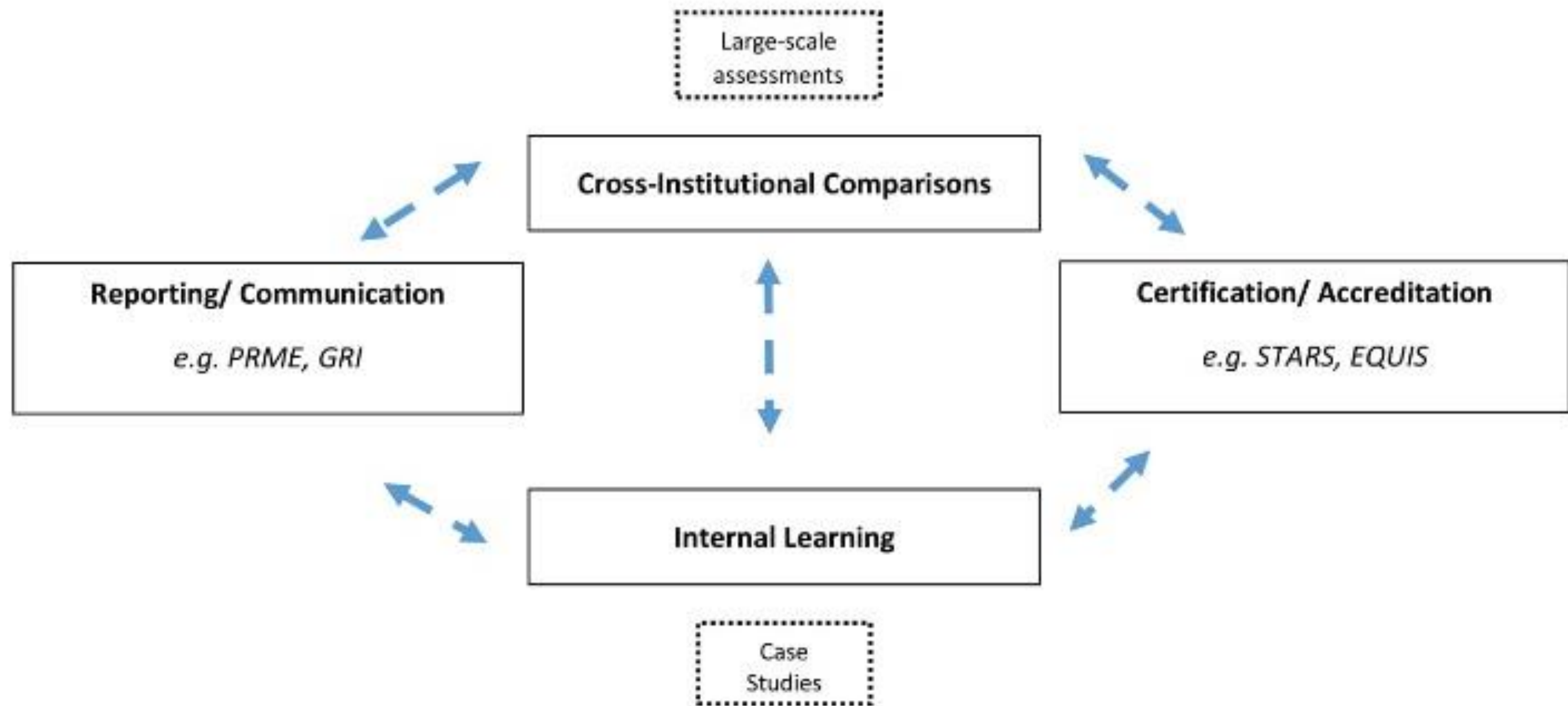


Sustainability Assessments in Higher Education

- Examine the integration of sustainability (and related themes) into
 - education
 - research
 - operations
 - community engagement
 - ...

Why Assess?

- **Quality management systems**
 - E.g., T. Holm et al (2015)
- **Voluntary initiatives**
 - E.g., Principles for Responsible Management Education (PRME)
 - *requires participating organizations to report on their activities*
- **Accreditations**
 - E.g., Association to Advance Collegiate Schools of Business (AACSB); the European Foundation for Management Development Management Development Network (EFMD)
 - *require organizations to report how they integrate sustainability themes in curriculum*
- **Sustainability reporting in higher education**
 - E.g., Global Reporting Initiative (Ceulemans et al., 2015)
- **Standalone curricular assessments**
 - E.g. Lambrechts et al. (2013)



- Regardless of why a university chooses to perform a curricular assessment, assessments can offer university leaders a starting point for **change**, by providing a baseline of where sustainability issues are present in the programs and where programs can be improved upon (Lozano and Young, 2013: 134-135).

What gets measured gets managed...and thus “improved”

Sustainability Assessment Tools for Higher Education

- **Multiple assessment frameworks/tools available**
 - different criteria, emphasis, and broadness of their conceptualization of “sustainability”
- **Reviews** of assessment tools:
 - Fischer et al., 2015
 - Shriberg, 2002
 - Cole, 2003
 - Yarmine and Tanaka, 2012

Examples of Sustainability Assessment Tools for Higher Education	Shriberg (2002)	Kamal and Asmuss (2012)	Yarmine and Tanaka (2012)	Gómez et al. (2014)
State of the Campus Environment National Wildlife Federation, 2001 (criteria and benchmarking data) (https://www.nwf.org/EcoLeaders/Campus-Ecology-Resource-Center/Reports/State-of-the-Campus-Environment)	x		x	
Sustainability Assessment Questionnaire (SAC) Association of University Leaders for a Sustainable Future (ULSF), 2001 (criteria) (http://ulsf.org/sustainability-assessment-questionnaire/)	x	x	x	
Auditing Instrument for Sustainability in Higher Education (AISHE) Rooda, 2000, 2002 (criteria)	x		x	
Campus Sustainability Selected Indicators Snapshot/Guide New Jersey Higher Education Partnership for Sustainability, 2001 (https://www.ramapo.edu/njheps/)	x		x	
Grey Pinstrips with Green Ties (now “Beyond Grey Pinstripes”) World Resource Institute, 2001, 2011 (criteria and benchmarking) (https://www.wri.org/publication/beyond-grey-pinstripes-2001)	x			
Campus Sustainability Assessment Framework (CSAF) Cole, 2002 (criteria) (http://neumann.hec.ca/humaniterre/campus_durable/campus_memoire.pdf)		x	x	
College of Sustainability Report Card Sustainable Endowments Institute, 2007 (http://www.greenreportcard.org/index.html)		x	x	
Sustainability Tracking Assessment and Rating System (STARS) Association for the Advancement of Sustainability in Higher Education (AASHE), 2010 (criteria and benchmarking data) (https://stars.aashe.org/)		x	x	x
Graphical Assessment of Sustainability in Universities (GASU) Lozano, 2006 (criteria)				x

- Sustainability Assessment Tools tend to:
 - over emphasize **environmental topics**
 - under emphasize **academic indicators...**

(Yarmine and Tanaka, 2012)

Curricular Assessments



Vertical vs Horizontal ERS Curricular Integration

Vertical Integration	Horizontal Integration			
<u>Discipline courses</u> 1) Strategic Management 2) Accounting 3) Microeconomics ... + <u>Standalone ERS</u> <i>Corporate Social Responsibility</i>	Strategic Management ➤ <i>includes e.g., responsible management</i>	Accounting ➤ <i>includes e.g., environmental, social, governance disclosure</i>	Microeconomics ➤ <i>includes e.g., externalities</i>	+ Corporate Social Responsibility ➤ <i>brings ERS themes together</i>

Standalone courses on ERS

ERS integrated in **disciplinary** courses

STARS (AASHE): credit AC1

- Calls on institutions to conduct an inventory of:
 - 1) “**sustainability courses**” (courses for which the primary focus is on sustainability and/or understanding or solving one or more major sustainability challenge), and **Vertical**
 - 2) “**courses that include sustainability**” (courses that are focused on a topic other than sustainability, but incorporate a unit or module on sustainability or a sustainability challenge, include one or more sustainability-focused activities, or integrate sustainability issues throughout the course) (AASHE, 2016: 36). **Horizontal**

- AASHE allows **each institution to choose its own methodology** to categorize “courses that include sustainability”, but does note that looking at stated learning outcomes and course objectives may “provide a richer view of sustainability course offerings than simply reviewing course descriptions, but it is not required” (AASHE, 2016: 34).

Terminology Scans



Terminology Scans

- Several authors determine “sustainability courses” by looking for specific ERS terms in:
 - Course title
 - Course content
 - Competence schemes
 - Learning outcome schemes
 - Evaluation methods
 - Learning materials
 - Etc.

Ceulemans et al. (2011)	Lozano (2010)	Wu et al. (2010)	Stough et al. (2018)
Sustainability	Economic: GNP, Productivity	Biodiversity	Sustainability
Sustainable Development	Economic: Resource use, exhaustion (materials, energy)	Climate change	Sustainable Development
Corporate Social Responsibility	Economic: Finances and SD	Community engagement	Responsibility
Vertical	Economic: Production, consumption patterns	Corporate citizenship	Corporate Social Responsibility (CSR)
	Economic: Development economics	Corporate environmental responsibility	Ethic(s), -al)
	Environmental: Policy/administration	Corporate responsibility	Stakeholder Inclusiveness
	Environmental: Products and services (inc. Transport)	Corporate social responsibility (CSR)	Market Failure: Market failure
	Environmental: Pollution/accumulation of waste/effluents	Culture diversity and intercultural understanding	Market Failure: Externalities
	Environmental: Biodiversity	Disaster prevention and mitigation	Market Failure: Common resources
	Environmental: Resource efficiency and eco-efficiency	Ecology	Environmental: Ecology
	Environmental: Global warming, emissions, acid rain, ozone depletion	Ecosystem	Environmental: Environment
	Environmental: Alternatives	Energy	Environmental: Planet
	Social: Demography, population	Environmental health and safety	Environmental: Green
	Social: Employment, unemployment	Environmental stewardship	Society: Socio-economic
	Social: Poverty	Equal opportunity	Society: Society
	Social: Bribery, corruption	Ethics	Society: Social welfare
	Social: Equity, justice	Fair trade	Society: Human Rights
	Social: Health	Gender equality	Society: Labor (rights)
	Social: Social cohesion	Greening	Society: (Un)employment
	Social: Education	Human rights	Society: (In)equality
	Social: Diversity	Market economy	Society: Diversity
	Social: Cultural diversity (own and others)	Natural resource	Horizontal
	Social: Labor, human rights	Natural resources management	
Cross-Cutting: People as part of nature/limits to growth	Peace and human security		
Cross-Cutting: Systems thinking/application	Pollution management		
Cross-Cutting: Responsibility	Poverty prevention		
Cross-Cutting: Governance	Race relations		
Cross-Cutting: Holistic thinking	Recycle		
Cross-Cutting: Long-term thinking	Renewable energy		
Cross-Cutting: Communication/Reporting	Rural development		
Cross-Cutting: SD statement	Sustainability		
Cross-Cutting: Disciplinary	Sustainable development	Vertical	
Cross-Cutting: Ethics/philosophy	Sustainable growth		
Horizontal	Sustainable procurement		
	Sustainable urbanization		
	Triple bottom-line		
	Waste		

Unlocking the Potential of Horizontal
Curricular Assessment for Ethics,
Responsibility, and Sustainability

KU Leuven



Programs

Specialized

1. Bachelor/Master in Economics
2. Bachelor/Master in Business Economics
3. Bachelor/Master in Business Administration
4. Master in Information Management
5. Master in Accountancy and Auditing
6. Master in Insurance Studies

Integrative

1. Bachelor/Master in Business Engineering
2. Bachelor/Master in Information Systems Engineering
3. Bachelor/Master in Environment, Health and Safety Management
4. Master in Economics, Law and Business Studies
5. Master in Financial and Actuarial Engineering

Broadening

1. Master in Management
2. Master in Economic Policy
3. Master in International Business Economics and Management

Advanced

1. Master in Advanced Studies in Economics
2. Doctoral Program in Economics
3. Doctoral Program in Business Economics
4. Academic Teacher Training

Data Set

- 2017-2018: **1866 courses** offered by the KU Leuven FEB
 - (some courses are offered in different programs, and there for can be counted multiple times)
- **Course characteristics**
 - Program
 - Campus
 - Course title
 - Course description
 - Course number
- **Instructor characteristics**
 - Gender
 - Age
 - Nationality (Belgian; non-Belgian)

Curricular Scan

- **Horizontal Assessment** (course titles and descriptions, based on ECTS file)
- **Core ERS themes** included:
 - 1) **sustainability** (*sustainability, sustainable development*);
 - 2) **responsibility** (*responsibility, corporate social responsibility, CSR*);
 - 3) **ethics** (*ethic(s), ethical*).
- **Additional ERS themes** included:
 - 1) **stakeholder inclusiveness** (*stakeholder*);
 - 2) **market failure** (*market failure, externalities, common resources*);
 - 3) **environment-related terms** (*ecology, environment, planet, green*);
 - 4) **society-related terms** (*socio-economic, society, social welfare, human rights, labor [in the context of labor rights], (un)employment, (in)equality, diversity*)
- **Context** in which the term was used was evaluated
 - make sure only course descriptions that used the term with the intended meaning for our analysis was captured
- **Binary** score
 - “yes” outcome if the theme is found (core or additional) in the course file
 - “no” outcome if the theme is absent in the course file.

Core ERS Themes			Additional ERS Themes			
Sustainability/ Sustainable Development	Responsibility/ Corporate Social Responsibility (CSR)	Ethics/Ethical	Stakeholder	Externalities/ Common Resources/ Market Failure	Ecology/ Environment/ Planet/ Green	Socio-Economic/ Society/ Impact on Society/Social Welfare/ Human Rights/ Labor/ Unemployment/ Inequality
38	47	71	27	28	115	357

Integrated in **6.7% of courses**

Integrated in **23% of courses**

What programs have high/low ERS integration?

Core ERS themes (1=present)

Program	0	1	Total
BBAB	64	5	69
BEWL	55	3	58
BHWA	52	6	58
BMPMB	43	8	51
BTEWHB	47	6	53
BTEWHIBL	53	2	55
BTEWHL	68	4	72
BTEWK	72	4	76
BTEWL	65	4	69
MARL	27	2	29
MBAA	29	2	31
MBAB	46	10	56
MBEL	130	3	133
MBENGL	120	4	124
MBL	36	1	37
MEL	58	7	65
MERBL	70	2	72
MEWL	57	5	62
MHA	54	6	60
MHB	76	9	85
MHIB	67	7	74
MIBEMB	21	5	26
MIL	10	0	10
MIML	25	2	27
MML	15	0	15
MMPMB	7	4	11
MTEWHIBL	77	3	80
MTEWHIL	170	8	178
MTEWL	116	5	121
MVL	9	0	9

Additional ERS themes (1=present)

Program	0	1	Total
BBAB	58	11	69
BEWL	37	21	58
BHWA	45	13	58
BMPMB	14	37	51
BTEWHB	42	11	53
BTEWHIBL	42	13	55
BTEWHL	55	17	72
BTEWK	64	12	76
BTEWL	46	23	69
MARL	27	2	29
MBAA	26	5	31
MBAB	38	18	56
MBEL	117	16	133
MBENGL	107	17	124
MBL	26	11	37
MEL	43	22	65
MERBL	54	18	72
MEWL	39	23	62
MHA	44	16	60
MHB	66	19	85
MHIB	59	15	74
MIBEMB	14	12	26
MIL	10	0	10
MIML	24	3	27
MML	15	0	15
MMPMB	5	6	11
MTEWHIBL	71	9	80
MTEWHIL	143	35	178
MTEWL	94	27	121
MVL	8	1	9
Total	1,433	433	1,866

Programs low/no ERS integration

Specialized

1. Bachelor/Master in Economics
2. Bachelor/Master in Business Economics
3. Bachelor/Master in Business Administration
4. Master in Information Management (Leuven)
5. Master in Accountancy and Auditing
6. Master in Insurance Studies (Leuven)

Integrative

1. Bachelor/Master in Business Engineering
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1. Master in Management (Leuven)
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2. Doctoral Program in Economics
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Programs high core ERS integration

Specialized

1. Bachelor/Master in Economics
2. Bachelor/Master in Business Economics
3. Bachelor/Master in Business Administration (Brussels)
4. Master in Information Management (Leuven)
5. Master in Accountancy and Auditing
6. Master in Insurance Studies (Leuven)

Integrative

1. Bachelor/Master in Business Engineering
2. Bachelor/Master in Information Systems Engineering
3. Bachelor/Master in Environment, Health and Safety Management (Brussels)
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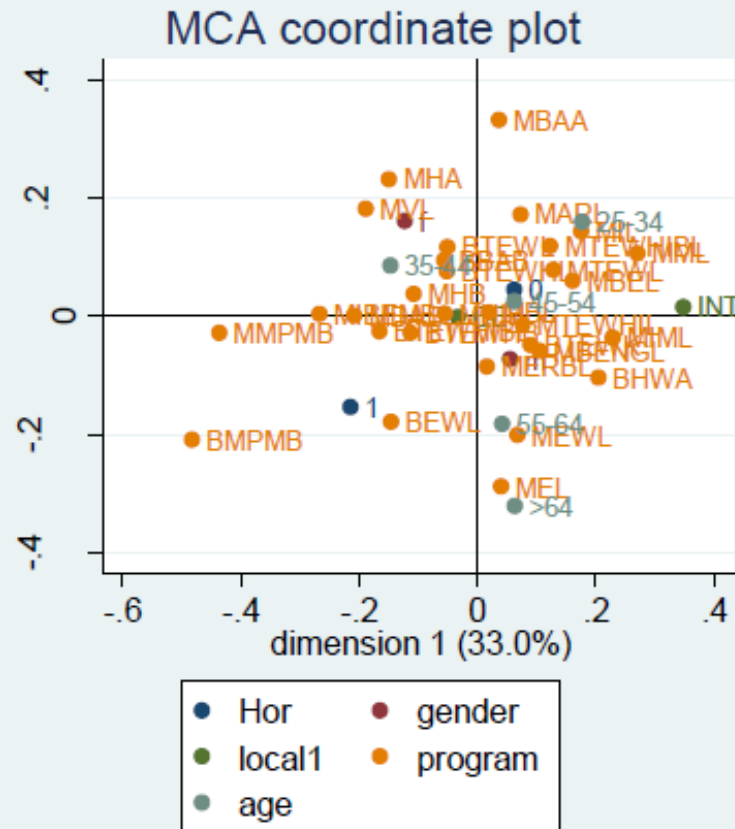
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Programs with high **additional ERS** integration



coordinates in principal normalization

Variable	Estimate	Std. Error	P-value
Intercept	-1.407	0.188	<0.001
BEWL	0.841	0.331	0.011
BMPMB	2.379	0.366	<0.001
BTEWL	0.714	0.317	0.024
MBAB	0.660	0.342	0.054
MEL	0.737	0.322	0.022
MEWL	0.879	0.323	0.007
MIBEMB	1.253	0.436	0.004
MMPMB	1.589	0.634	0.012

Results of multiple correspondence analysis &
Logistic regression model with factor "program" (MTEWHIL references program)

Programs high additional ERS integration

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Other relationships in the dataset?

Campuses

Campus	Core ERS integration		Total
	No	Yes	
Antwerp	135 (138.9)	14 (10.1)	149
Brussels	371 (396.1)	54 (28.9)	425
Kortrijk	72 (70.8)	4 (5.2)	76
Leuven	1161 (1133.2)	55 (82.8)	1216
Total	1739	127	1866

Campus	Additional ERS integration		Total
	No	Yes	
Antwerp	115	34	149
Brussels	296	129	425
Kortrijk	64	12	76
Leuven	958	258	1216
Total	1433	433	1866

Strong evidence of an association between ERS (core and additional) and campuses

- **Core** - chi-squared statistics ($X^2 = 35.17$, with $df = (4-1)(2-1)=3$, and p -value is < 0.0001)
- **Horizontal** - chi-squared statistics is $x^2 = 17.23$, with $df = (4-1)(2-1)=3$ and p -value is 0.001

Characteristics of instructor: Age

Age	Core ERS integration		Total
	No	Yes	
25-34	89	4	93
35-44	397	21	418
45-54	433	56	489
55-64	280	13	293
>64	29	1	30
Total	1228	95	1323

Core ERS themes increases with the age of instructors until the age interval 45-54 and then decreases

Age	Additional ERS integration		Total
	No	Yes	
25-34	81	12	93
35-44	315	103	418
45-54	387	102	489
55-64	224	69	293
>64	19	11	30
Total	1026	297	1323

Age is positively associated with instructors integrating **additional ERS** themes into their courses.

- no linear association (based on Mantel-Haenszel statistics) was found between additional ERS themes and age,
- significant **general association** (based on chi-squared statistics is $\chi^2=21.43$ with $df = (5-1)(2-1)=4$; p -value is <0.0001) was found

Characteristics of instructor: Nationality

Additional ERS Integration			
Nationality	No	Yes	Total
Belgian	925	283	1208
International	101	14	115
Total	1026	297	1323

No significant associations between **core ERS themes** and **gender** or **nationality** of instructors

Strong evidence of an **association between additional ERS themes** and **nationality** of instructors

- Of 1323 professors, 1208 are Belgian and 115 are International
- Out of 297 courses with additional ERS theme, 283 taught by Belgians; 14 taught by International instructors
- The chi-squared statistics is $\chi^2 = 7.63$ with $df = (2-1)(2-1)=1$; p -value = 0.006

Characteristics of instructor: Gender

- No association between **gender** and **core or additional ERS** integration

Questions the data leave us with...

- Is Environmental Health and Safety (MPM) acting as an **anchor program** for core ERS themes (positively influencing programs around it)?
- Why are **age and additional ERS** integration positively related?
 - Do we gain the ability to deal with/appreciation for such concepts as we grow in our teaching career?

Curricular Assessments in Economics
UGent, FEB



Intro

- FEB UGent is integrating sustainability in its main curricula: economic sciences, applied economic sciences, business engineering, business administration, and public administration and management
- Pilot case: Business Administration (2015 – ongoing)
- From 2018 onwards: other curricula + focus on the faculty level (bottom-up)
- Main goal: integrate sustainability topics in the economic programmes (both horizontally and vertically)

Business Administration

- Working group of professors and teachers representing the different main subjects, ATP and (former) students
- Two stages:
 - curricular assessment
 - vision and goals, resulting in an action plan
- Support from the Department for Education (UGent) and from the Center for Sustainable Development (CDO, PSW)
- >2000 students in the programme

Curricular Assessment

- CDO screened all ECTS fiches
- In parallel, working group members asked colleagues in the different subjects about the way they addressed sustainability issues within their courses
- In general:
 - teachers indicate to address sustainability issues a lot more frequently than students recognize
 - screening ECTS fiches demanded a lot of time, and was of limited use in the end
 - great potential, many linkages, group of relatively young teachers willing to invest

Action Plan and Implementation

- Main aim: integrate sustainability in different courses in a coherent way, for all students in the Bachelor of Business Administration
- Implementation
 - start: introduction session at the beginning of Ba1 that can serve as an umbrella ~ linked to entrepreneurship
 - in each year, have three or more colleagues talk about the importance of sustainability for their field – e.g. “limits to growth” and climate change in Macroeconomics; and map these efforts
 - focus on two tracks: general economic courses and management courses
 - Ba3: mandatory course “Corporate Social Responsibility” and elective course “Sustainable Development”

Faculty of Economics and Business Administration

- Similar working groups in other programmes at the FEB
- Curricular assessments:
 - SDG screening
 - previously: list of sustainability topics
- Next step: vision and implementation plan
- From the 5 working groups we now move to the Faculty level, e.g. FEB policy plan on education
 - AACSB accreditation, PRME?

Beyond FEB

Other first round pilot case:
Electromechanical
Engineering Technology

Book on "Education
programmes on transition"
(CDO, UGent)

Other disciplines, faculties, ...



On the way to sustainable higher education

A screening of university programs in the
Social Sciences

UAntwerp

Kim Boudiny (UFOO FSW)
Karen Meynen (CIKO FSW)
Pieter Spooren (former CIKO-employee FSW)



Faculty of Social Sciences (Dutch: 'FSW')

- Bachelor programmes

- Communication Studies
- Political Science
- Social & Economic Sciences (collab. with 'FTEW')
- Sociology

- Master programmes

- Communication Studies
 - Media Studies
 - Strategic Communication
- Political Science
- Social & Economic Sciences
- Sociology
- Social Work & Welfare Studies
- Political Communication
- Film Studies & Visual Culture
- Instructional & Educational Sciences
- International Relations & Diplomacy
- *(Environmental Science)*
- *(Gender & Diversity)*

Starting point

- Sustainability = 1 of the 7 (by now 9) strategic policy themes of UAntwerp
 - 2015: exploratory meetings between Education Department University of Antwerp & faculty CIKO-employees
 - CIKO = 'Cel voor Innovatie en Kwaliteitszorg in het Onderwijs'
(Unit for Innovation and **Quality Assurance** in Education)
- ⇒ first overview of sustainability within each faculty
- Rudimentary overview (only a couple of initiatives listed)
 - ! Important: distinction between content & process

Starting point

- Content & process: attention for sustainability in
 - Core competencies ('kerncompetenties') & courses (*content*)
 - *Core competences = core learning outcomes per educational program (e.g., Bachelor of Communication Studies: 13 core competences)*
 - The way in which education is organized & developed within the university and/or faculty (*process*)
- January, 27th 2016: rudimentary overview @ faculty
 - call for control and supplement by the end of February / beginning of March (2016)
 - time constraints

Towards an **FSW** strategy for screening

- Dichotomy content & process



Further distinction:

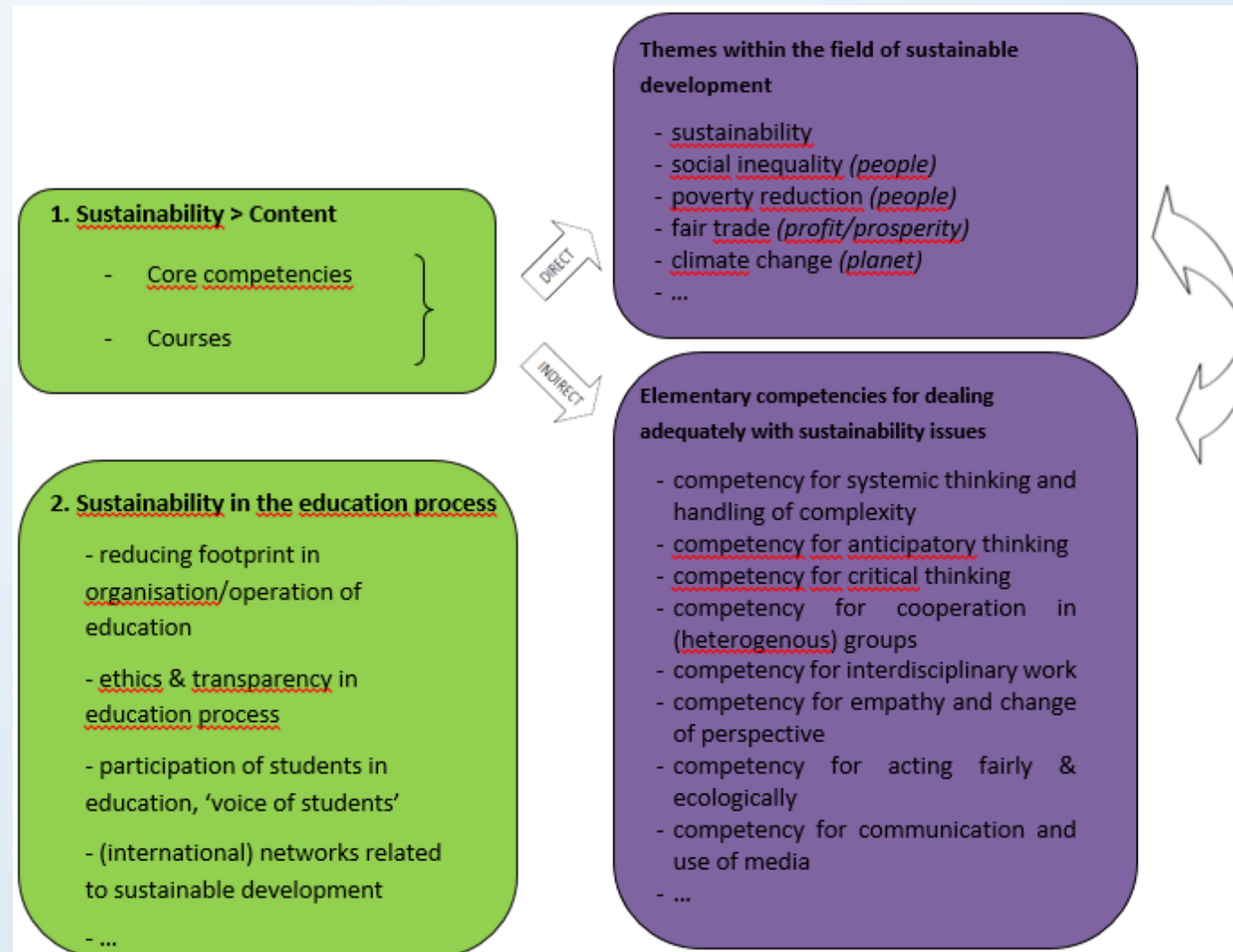
- Courses that realize **thematic** knowledge transfer
~ STARS methodology :
 - “Sustainability courses”
e.g., course “Sustainability, transitions and society” > Bachelor of Sociology
 - “Courses that include sustainability”
e.g., course “Society, facts and problems”: course in which various current problems of the welfare state are treated, *including* poverty & social inequality > Bachelor of Sociology, Bachelor of Social & Economic Sciences
- Courses that contribute to the development of important **underlying skills/competencies** for sustainable development
Cf. key competencies by Rieckmann (2012)

Towards an **FSW** strategy for screening

- Rieckmann (2012): 12 key competencies
- Due to the **complexity** and **interconnectedness** of the social, economic, cultural and ecological problems, the **high velocity** with which societal changes take place, and the **uncertainties and risks** that this entails, institutions for higher education need to create particular learning settings in which students can improve their competencies for:
 - Understanding complexity
 - > competency for systemic thinking and handling of complexity
 - Understanding long-term effects of present-day actions
 - > competency for anticipatory thinking
 - Questioning common assumptions
 - > competency for critical thinking

e.g.

Towards an **FSW** strategy for screening



Execution – in phases (cf. time constraints)

- PHASE 1
 - a. Screening of core competences, online course information & ECTS-files (2015-2016) as starting point for **content** screening
 - b. Identification of sustainability in education **process**: based on knowledge of CIKO/UFOO staff & by targeted contacting of teachers
 - UFOO = 'Universitair Fonds voor Onderwijsontwikkeling' (University of Antwerp Fund for Educational Development)
 - c. Submission of first draft of overview to 'peers' (i.e. FSW teacher with substantive expertise in the field of sustainability, chair of FSW education committee, quality assurance coordinator)
 - Including an (FSW tailored) summarizing framework on sustainability in education -> sensitization !
 - d. Submission of second draft of overview to chairs of educational programme committees & FSW education committee (-> chairs encouraged to further distribute overview amongst their teachers)
 - Including an (FSW tailored) summarizing framework on sustainability in education -> sensitization !
 - e. Submission of 'final' draft to Education Departement UAntwerp
- PHASE 2 (*ongoing*)
 - a. Further processing and quantification of the results (e.g., coding of retained courses for reasons of realizing thematic knowledge transfers: coding content of courses according to the 3 p's)
 - 3 coders (UFOO/CIKO): first separately, afterwards looking for consensus
 - b. Identification of potential improvement actions \Rightarrow targeted contacting of teachers: realizing change !

Identification of relevant courses/competencies & coding

- Important background information
 - Research shows: different approaches to perform assessment (e.g., instrument, precise keywords used in terminology scans, ...) can greatly impact results
 - E.g., Stough et al. (2018) – comparison of several methods: one of the methods used => 19 out of 20 courses (i.e. 95%) were labelled as courses that include sustainability
 - \implies Risk: sustainability becomes a container concept; results of screening = 'laundry lists'
 - \implies Can potentially impede identification of areas for improvement ('we already seem to be doing enough')
- Our ambition: finding the balance between
 - Avoiding 'laundry lists'
 - Without doing injustice to what does happen in terms of sustainability in FSW educational programmes

Some results & encountered difficulties

- Competencies

- Core competencies

- 1x : explicit mentioning of term 'sustainable':

- "The master recognizes the ethical and **sustainable** aspects of socio-economic questions and can integrate these in a global frame of thinking."* (Master Social & Economic Sciences)

- One of the most prevalent competencies = '**competency for critical thinking**' ~ Stough et al. (2018)

- E.g.: *"The bachelor is able to discuss and reason (NL: argumenteren en redeneren), to recognize sophisms (NL: drogredenen erkennen), to develop standards for argumentation (NL: maatstaven voor argumentatie ontwikkelen), to recognize plausible points of view and to take a critical stand (NL: plausibele standpunten erkennen en kritische standpunten innemen)."* (Bachelor Communication Studies)

- Number of core competencies codes as connected versus not connected to one of Rieckmann's competencies

- E.g., Bachelor of Communication Studies: 7 out of 13 core competencies connected to Rieckmann's list of competencies *(based on current coding)*

- Competencies **not** coded as connected to Rieckmann's list: often quite domain specific, e.g.:

- "The bachelor is able to clearly define and interpret basic and core concepts in the domain of social sciences in general and communication sciences in particular."* (Bachelor Communication Studies)

Some results & encountered difficulties

- Competencies

- Education-specific differences

- E.g., Bach/Master of Social & Economic Sciences:

- relatively higher prevalence of 'competency for interdisciplinary work'

- collaboration: Faculty of Social Sciences & Faculty of Business and Economics

- Competencies – encountered difficulties

- Discussions between coders > room for interpretation; ambiguity

- For majority of (core) competencies: consensus was easily reached, however in the early phases of coding ca. 1 in 6 core competencies provoked more debate

- How strict are you when coding? How high do you set the bar?

Some results & encountered difficulties

- How high do you set the bar?

- E.g., 'competency for systemic thinking and handling of complexity'

-> summarized in Stough et al. (2018) as follows: 'ability to **identify and understand connections; think connectively**; be able to deal with uncertainty'

(cf. Rieckmann (2012): complexity & interconnectedness of social, cultural, ... problems)

- No (or not much) discussion, e.g.:

"The bachelor is able to reflect upon the broad field of communication in general, without losing sight of the complex interplay (NL: complexe samenspel) **of social, cultural, economical, technological and political aspects**. The bachelor takes into account the ethical implications of forms and expressions of communication." (Bachelor Communication Studies)

"The bachelor has knowledge of and **insight in causes, effects and interrelatedness of the main social developments** (NL: kennis van en inzicht in de oorzaken, gevolgen en onderlinge verwevenheden van de belangrijkste sociale ontwikkelingen) in modern societies." (Bachelor Sociology)

- <-> more doubt, e.g., competences related to and courses on statistics & research methods

Some results & encountered difficulties

- How high do you set the bar? (i.c. statistics & research methods)
 - 1. (competencies relating to) introductory courses on statistics & research methods
 - ❑ 'identify and understand connections', 'interconnectedness' -> statistics is largely about searching for relations between variables
 - ❑ **BUT:** 
 - 2. actually applying these research methods, setting up/executing research (without explicitation of how advanced the applied methods should be)
 - ❑ to be able to set up and execute research & report the results, further insight is necessary than mere knowledge of some basic techniques
 - ❑ **BUT:** many basic research methods/analysis strategies assume rather simplistic relationships (e.g. linear regression), and research on systemic thinking (e.g., Linard & Aretz, 2000, Rogers et al. 2013) seems to emphasize:
 - The ability to see interrelationships/dynamic relationships rather than linear cause-effect chains
 - Feedback loops
 - Interactions, which are in addition context- and time-dependent
 - Seeing patterns of change, not just static snapshots
 - "The primacy of the whole"
 - 3. being able to use *advanced* research methods (which allow for feedback effects, time effects etc.), e.g. course "Advanced Econometric Methods & Applications" (Master Social & Economic Sciences)
 - 

-> We're currently examining how Rieckmann (2010) approached this in his German-language basic work (i.e. finding out whether his basic work provides further explanation/more information than his subsequent English articles)

Some results & encountered difficulties

- How high do you set the bar? (i.c. 'competency for systemic thinking and handling of complexity')
 - a lot of work devoted solely & entirely to the competency of systemic thinking & handling of complexity: what is it?, how can it be fostered?, ... (e.g., Habron, Goralnik & Thorp, 2012; Reynolds, 2017; Rogers et al., 2013)

"Systems thinking is too elusive, abstract, vague", "Language is obscure", "How do you put it in practice?"
(> Reynolds, 2017)

- \Rightarrow **Double ambiguity** (or at least a meaning which is not self-evident):
 - 1. sustainability concept as a whole (different definitions, approaches, ... in literature)
 - 2. (some of the) specific underlying competencies

- ~ questions about 'competency for communication & use of media'
 - Summarized in Stough et al. (2018) as follows: 'ability to communicate in intercultural contexts; to deal with IT; to be able to pass criticism on media'



should the competency explicitly refer to communication in *intercultural* contexts, or does a competency relating to 'being able to communicate interpersonally as well as in groups' suffice?

- \Rightarrow Important: searching for and agreeing (amongst coders) on minimum requirements, as well-considered and well-founded as possible
e.g., competency for interdisciplinary work (*next slide*)

Some results & encountered difficulties

- How high do you set the bar? (i.c. 'competency for interdisciplinary work')
 - In Stough et al. (2018) summarized as follows: '**ability to deal with knowledge and methods of different disciplines** and be able to work on complex problems in **interdisciplinary contexts**'
 - Current FSW approach:
 - "The bachelor has an **introductory knowledge of and insight in adjoining disciplines** (NL: aangrenzende disciplines): philosophy, history, psychology, economics, law." (Bachelor Sociology)
-> refers to separate introductory courses, no guarantee of actually bringing knowledge together
 - + "The master is able to systematically **collect and** critically **process** (inter)national sources and research **literature on a specific** social **question from a multidisciplinary perspective.**" (Master Social & Economic Sciences)
-> multidisciplinary as minimum requirement: drawing on knowledge from different disciplines for the discussion of a topic, but staying within the boundaries of each discipline (= precursor for real interdisciplinary work)
 - ++ "The bachelor will be able to **compare, integrate and synthesise** concepts and conceptual frameworks from various disciplines – particularly economics and sociology – **from an interdisciplinary perspective.**" (Bachelor Social & Economic Sciences)
-> interdisciplinarity: analyzing, synthesizing and harmonizing links between disciplines into a coordinated and coherent whole (= a step further than multidisciplinary)

Some results & encountered difficulties

- Themes

- p or p's most prominent based on ECTS files?
- People = most prevalent
- Relationship people – profit/prosperity (e.g., Bach/Master Social & Economic Sciences)
cf. Connelly's triangle (2007): topics positioned towards extreme viewpoints versus mutually interacting viewpoints
- Occasionally: planet as prominent theme, e.g.:
Course 'Milieusociologische en -economische analyse en beleidsevaluatie' (Master of Social & Economic Sciences) ENG: 'Environmental sociological and economic analysis and policy evaluation'
- Education-specific differences
 - E.g., Bach/Master of Sociology: quite a lot of courses that include sustainability-related themes
 - ⇒ Laundry list? Or inherent to educational programme? Sociology: study of social relationships...
 - ⇒ <-> relatively less courses with sustainability-related themes in 'Master of Film Studies & Visual Culture' *(based on current coding)*
- Also here: room for interpretation & discussion, especially in view of limitations of ECTS files (e.g., some were filled in more extensively than others)

Some results & encountered difficulties

- Process

- E.g., plagiarism check of master theses & of various course-related papers by use of SafeAssign; various initiatives to reduce ecological footprint (use of electronic evaluation methods in several courses, recto verso copying of master theses, sustainable catering in teacher-student events, ...); list of teachers who are members of (international) networks (with educational relevance) related to sustainable development, ...

- Improvement actions

- Two-track policy

- Visibility: cf. sustainability-related contents present in courses but not yet included in ECTS files -> now making explicit in ECTS files (> contact with teachers)
 - Substantive changes

Some results & encountered difficulties

- Visibility, e.g.,: ECTS file on “Bachelorproef” (Social & Economic Studies) -> added sentence on research ethics (after contact with titular):

“Attention is also paid to the ethical dimension of the study (citation and paraphrasing versus plagiarism, lawful versus unauthorized data manipulations, etc.).”

- Substantive changes, e.g.,: course ‘Logica & wetenschapskritiek’ (Communication Studies): inclusion of multi/transdisciplinary cases, ...
- Under exploration:
 - Implementation of **interdisciplinary** (FSW – FTEW) project-based group work? (students would be making **socially meaningful contributions** to ngo’s and non-profit organizations such as ‘Moeders voor Moeders’, ‘Payoke’, ...)
 - Digital platform on sustainability?
 - More attention to *planet*-aspect through activities separate from curriculum (e.g., further embedding of ‘Climate Weeks’ (centrally organized) in FSW)?
 - ...

Some results & encountered difficulties

- Ideas for further refinement of measuring/screening instrument
 - Making sure every teacher has looked at the obtained results (overview + summarizing framework on sustainability in education)
 - Asking @ teachers: three most important competencies (> Rieckmann) for each of their courses
 - + ~~laundry lists~~ => insight into competencies which are truly most important for and characteristic of FSW educational programmes
 - + teachers know their courses best (<-> ECTS files do not provide 'full picture')
 - (most) teachers will have less 'feeling' with the different nuances embedded in the sustainability concept and each of its underlying competencies (cf. complexity notion/double ambiguity)
- Some challenges for actual implementation refined instrument/maintaining overview on sustainability up-to-date (*infra*)

Conclusion & discussion

- In literature: diversity of screening instruments & approaches
 - + results of performed screenings often not published (Lambrechts & Rymenams, 2016)
 - ⇒ = complicating factors for institutions/faculties/ed. programmes wanting to perform a sustainability screening
 - ⇒ Our ambition to document FSW approach (UAntwerp)
 - Especially in light of cultural differences & differences between disciplines influencing chosen strategy & identification of improvement actions
 - Cf. Rieckmann (2012): cultural differences in the extent to which certain competencies are considered important
 - Own study: even noticeable differences between educational programmes within one faculty
- Method of coding: not written in stone, certain inherent ambiguity-> avoid 'over-fixation' on numbers/quantification
 - More important: What does the observed mean for educational practice? Which improvement actions can be identified and realised?
 - In several previous studies: mentioning of 'screening = starting point for change', however actual changes/efforts towards change are not or only briefly discussed
- Challenges for keeping obtained overview up-to-date/implementing refined screening instrument
 - Time constraints (both of CIKO/UFOO staff and teachers)
 - face many parallel demands (especially in view of upcoming 'Self Reflection with Peer Review' [in Dutch: ZPR])
 - 'Management changes' (shifting policy priorities)

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