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Tables

Table 1. Academic Rigour and Relevance Index (AR2I) – components and supporting literature

Parameters	Variables	Supporting literature
SC: Significance of the Contribution (<i>Reviewers – rigour</i>)	CR: Classification by the Reviewer PR: Perception by the Reviewer	George (2014); Corley & Gioia (2011); Mingers (2009); Mizzaro (2003)
ASI: Academic Scholarly Intelligence (<i>Academics – rigour</i>)	P _A R: PAttern Recognition of the topic GDST: Growth, Decline, Stability of the Topic	Miller & Hartwick (2002) Collins (2000)
RBS: Relevance to Business Systems (<i>Business practitioners – relevance</i>)	<i>Interestingness</i> RE: Read by Executives (or would you read it) EI: Executive Interest <i>Justification</i> CM: Change Mindsets TA: Take Action ISE: Impact to Society by Executives	Alvesson & Sandberg (2011); Palmer, Dick & Freiburger (2009); Baldrige, Floyd & Maroczy (2004); Daft, Griffin & Yates. (1987); Davis (1971); Weiss & Bucuvalas (1977); Dunn (1980); Duncan (1974); Shrivastava & Mitroff (1984)
PCSC: Perceived Content by Society and Citizens (<i>Society – relevance</i>)	<i>Interestingness – different context</i> IT: Interest in the Topic <i>Justification – different context</i> PPSA: Could make an improvement to Personal Productivity and Solutions Assembly RWC: Relevance to the Whole Community	Bornmann (2012a,b); Hodgkinson and Starkey (2011); Willmott (2012); Baldrige, Floyd & Maroczy (2004); Daft, Griffin & Yates. (1987); Davis (1971); Weiss and Bucuvalas (1977); Dunn (1980); Duncan (1974); Shrivastava and Mitroff (1984)
IR: Implications and Recommendations (<i>Business and society – relevance</i>)	JP _{BS} : Judgment Perceptions by Business Systems JP _{CIT} : Judgment Perceptions by CITizens	Bartunek & Rynes (2014); Scherer & Palazzo (2011); Antonacopoulou, Dehlin & Zundel (2011); Pedersen (2010)
CIF: Citations and Impact Factors (<i>Academics, secondary data – rigour</i>)	CIT: Number of CITations IF: Impact Factor of the journal	Kaur, Radicchi & Menczer (2013); Mingers & Liptakis (2014); Simsek, Heavey & Jansen (2013); Bornmann & Mutz (2011); Garfield (1972)

Table 2. Weights of the parameters and variables, assessed using the AHP method

Parameter	Weight	Variable	Weight
SC: Significance of the Contribution	0.2166	CR: Classification by the Reviewer	0.0722
		PR: Perception by the Reviewer	0.1444
ASI: Academic Scholarly Intelligence	0.1404	P _A R: PAttern Recognition of the topic	0.0468
		GDST: Growth, Decline, Stability of the Topic	0.0936
RBS: Relevance to Business Systems	0.3374	RE: Read by Executives	0.1230
		EI: Executive Interest	0.0208
		CM: Change Mindsets	0.0722
		TA: Take Action	0.1000
		ISE: Impact to Society by Executives	0.0215
PCSC: Perceived Content by Society and Citizens	0.1486	IT: Interest in the Topic	0.0357
		PPSA: Could make an improvement to Personal Productivity and Solutions Assembly	0.0312
		RWC: Relevance to the Whole Community	0.0817
IR: Implications and Recommendations	0.1074	JP _{BS} : Judgment Perceptions by Business Systems	0.0859
		JP _{CIT} : Judgment Perceptions by CITizens	0.0215
CIF: Citations and Impact Factors	0.0497	CIT/IF: Number of CITations / Impact Factor of the journal	0.0497

Table 3. Central classification of the variables used in the simulations, for an average article

Variables	Who answers?	Article profile			
		1	2	3	4
Significance of the contribution (SC)					
CR = Classification by the reviewer	Pre-existing data	70%	70%	70%	70%
PR = Perception by the reviewer	Reviewer	-1/0	-1	-1/0	-1
Academic scholarly intelligence (ASI)					
PAR = Pattern recognition of the topic	Academic	1	-1	1	-1
GDST = Growth, decline, stability of the topic	Academic	0/1	-1/0	0/1	-1/0
Relevance to business systems (RBS)					
RE = Read by executives (or would you read it?)	Business	0	-1	0	-1
EI = Executive interest	Business	0/-1	-1/-2	0	-1
CM = Change mindsets	Business	0/-1	-1/-2	0/-1	-1/-2
TA = Take action	Business	0/-1	-1/-2	0/-1	-1/-2
ISE = Perceived impact to society by executives	Business	0	-1	0	-1
Perceived content by society and citizens (PSSC)					
IT = Interest in the topic	Citizen	1	-1	1	-1
PPSA = Could make an improvement to personal productivity and solutions assembly	Citizen	0/1	-1/-2	1/2	-1/0
RWC=Relevance to the whole community	Citizen	0/1	-1/-2	1/2	-1/0
Implications and recommendations (IR)					
JP _{BS} = Judgment perceptions by business systems	Business	0	-1	0	-1
JP _{CIT} = Judgment perceptions by citizens	Citizen	0/1	-1/-2	1/2	-1/0
Citations and impact factors (CIF)					
CIT/IF = Number of citations/Impact factor of the journal	Pre-existing data	1.2	.8	1.2	.8

The values in this table concern an average article. The numbers used for the article profiles are defined in Figure 2. For the variables regarding ratings measured in a -3+3 scale, an above average article has a central classification one point above an average article, and a below average article has a central classification one point below an average article. For the initial reviewer classification, the central value is 75% for an above average article and 65% for a below average article, for all article profiles. For the Number of citations/Impact factor (CIT/IF), the central value for an above average article is 50% higher than the one used for an average article and, for a below average article, this value is 50% lower than the one used for an average article.

Table 4. Probability distributions for the behaviour model used in the simulations

First layer: distribution of the general opinion (preliminary values of the variables)					
Dispersion of the general opinion	Ratings measured in the -3/+3 scale		Classification of the reviewer (distribution percentage variation over central value)	by Citations / Impact Factor (CIT/IF) (distribution for a factor to which the value is multiplied)	
	Variables with one central value (v)	Variables with two central values (v_1 and $v_2=v_1+1$)			
Small	Discrete distribution: $P(v)=50\%$ $P(v-1)=P(v+1)=20\%$ $P(v-2)=5\%$ $P(v+2)=5\%$	Discrete distribution: $P(v_1)=P(v_2)=35\%$ $P(v_1-1)=P(v_2+1)=15\%$	Pert-style distribution with parameters (-20%, 0%, +20%)	beta distribution with parameters (1.0, 1.5)	beta distribution with parameters (0.5, 1.5)
Medium	Discrete distribution: $P(v)=40\%$ $P(v-1)=P(v+1)=20\%$ $P(v-2)=10\%$ $P(v+2)=10\%$	Discrete distribution: $P(v_1)=P(v_2)=1/6$ $P(v_1-1)=P(v_2+1)=1/6$ $P(v_1-2)=P(v_2+2)=1/6$	Average rigour/relevance: Pert-style distribution with parameters (-30%, 0%, +30%) Above/below avg. rigour/relevance: Pert-style distribution with parameters (-25%, 0%, +25%)	beta distribution with parameters (0, 1, 2)	beta distribution with parameters (0, 1, 2)
Large	Discrete distribution: $P(v)=20\%$ $P(v-1)=P(v+1)=20\%$ $P(v-2)=5\%$ $P(v+2)=20\%$	Discrete distribution: $P(v_1)=P(v_2)=30\%$ $P(v_1-1)=P(v_2+1)=15\%$ $P(v_1-2)=P(v_2+2)=5\%$	Average rigour/relevance: Uniform (-30%, +30%) Above/below avg. rigour/relevance: Uniform (-25%, +25%)	Uniform (0, 2)	Uniform (0, 2)
Second layer: distribution of the perturbation to be added to the general opinion (denoted by Δ)					
Dispersion of specific perturbations	Ratings measured in the -3/+3 scale		Classification of the reviewer	by Citations / Impact Factor (CIT/IF)	
Small	Discrete distribution: $P(\Delta=-1)=P(\Delta=0)=P(\Delta=+1)=1/3$		Not perturbed	Not perturbed	
Large	Discrete distribution: $P(\Delta=-2)=P(\Delta=-1)=P(\Delta=0)=P(\Delta=+1)=P(\Delta=+2)=1/5$		Not perturbed	Not perturbed	

Table 5. Monte Carlo simulation results for the AR2I classification of an average article, for large specific perturbations, based on 3,000 iterations

Article profile	Dispersion of general opinion	Equal weights for each parameter		Equal weights for each variable		AHP weights	
		the Mean	Standard Dev.	Mean	Standard Dev.	Mean	Standard Dev.
1: Theoretical development with simulated data, about a fashionable subject	Small	0.5413	0.0248	0.5630	0.0270	0.5235	0.0253
	Medium	0.5404	0.0328	0.5616	0.0440	0.5228	0.0323
	Large	0.5379	0.0446	0.5568	0.0628	0.5218	0.0425
2: Theoretical development with simulated data, about a non-fashionable subject	Small	0.3467	0.0222	0.3665	0.0221	0.3543	0.0235
	Medium	0.3516	0.0287	0.3704	0.0345	0.3584	0.0296
	Large	0.3627	0.0394	0.3790	0.0490	0.3681	0.0385
3: Theoretical development with real data, about a fashionable subject	Small	0.5765	0.0242	0.5945	0.0268	0.5456	0.0257
	Medium	0.5744	0.0335	0.5920	0.0441	0.5442	0.0319
	Large	0.5692	0.0434	0.5844	0.0626	0.5406	0.0425
4: Theoretical development with real data, about a non-fashionable subject	Small	0.3811	0.0232	0.3980	0.0230	0.3759	0.0242
	Medium	0.3848	0.0292	0.4007	0.0345	0.3792	0.0297
	Large	0.3927	0.0395	0.4064	0.0492	0.3872	0.0398

Table 6. Monte Carlo simulation results for the AR2I classification of above average and below average articles, for AHP weights and large specific perturbations, based on 3,000 iterations

Article profile	Dispersion of the general opinion	Above average article	average	Below average article	average
		Mean	Standard Dev.	Mean	Standard Dev.
1: Theoretical development with simulated data, about a fashionable subject	Small	0.6878	0.0244	0.3553	0.0236
	Medium	0.6775	0.0306	0.3601	0.0290
	Large	0.6567	0.0400	0.3713	0.0378
2: Theoretical development with simulated data, about a non-fashionable subject	Small	0.5165	0.0255	0.2124	0.0192
	Medium	0.5141	0.0316	0.2201	0.0227
	Large	0.5077	0.0404	0.2381	0.0297
3: Theoretical development with real data, about a fashionable subject	Small	0.7050	0.0240	0.3783	0.0235
	Medium	0.6948	0.0296	0.3824	0.0286
	Large	0.6745	0.0381	0.3908	0.0379
4: Theoretical development with real data, about a non-fashionable subject	Small	0.5396	0.0251	0.2291	0.0195
	Medium	0.5363	0.0312	0.2362	0.0236
	Large	0.5291	0.0404	0.2534	0.0311