

1 Title: Harnessing the power of the press with three indices of sustainable development

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16 **Abstract**

17 This paper describes the results of research designed to explore reporting of three indices

18 (Corruption Perception Index, CPI, Human Development Index, HDI and the Ecological

19 Footprint, EF) in the UK national press between January 1990 and December 2009.

20 Reporting of the indices was assessed by:

21 (a) the number of articles published each year mentioning the index at least once

22 (b) a weighting of (a) allowing for the different circulation between newspapers

23 (c) the diversity of newspapers having articles mentioning the index (using the Shannon

24 Index)

25 Results suggest that the EF scored highest across all three measures whereas the CPI was
26 lowest. The EF was also more likely to be reported in terms that implied a sense of ownership
27 as well as a concept and not just an index. Unlike the CPI and HDI, there is no single
28 methodology for the EF with various groups having their own approach. These features
29 appear to have aided the relative popularity of EF within newspaper reporting. Finally, there
30 was typically little if any description within the articles of the methodology or assumptions
31 that rest behind the indices. Hence they are usually presented as a ‘black box’ to provide
32 authoritative support for statements.

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34 Keywords: Corruption Perception Index; Ecological Footprint; Human Development Index;
35 national newspapers; UK

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50 **Introduction**

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52 In a seminal paper on social learning published in 1993 Peter Hall defined it as:

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54 *“a deliberate attempt to adjust the goals or techniques of policy in response to past*
55 *experience and new information. Learning is indicated when policy changes as the result of*
56 *such a process.”* (page 278)

57

58 Hall was referring specifically to insights gleaned within the field of macroeconomic
59 policymaking in Britain between 1970 and 1989. As part of his analysis he distinguished
60 three distinct kinds of ‘changes’ in policy, the first of which is change in instrument settings
61 as a result of *“experience and new knowledge”* while overall goals remain the same. But what
62 comprises *“experience and new knowledge”* and how that is assimilated into such ‘First
63 Order’ change in policy has been the subject of much research and debate (see Boezeman et
64 al. 2010 for a recent discussion and example in the field of environmental policy). Given the
65 pressing need of the world to achieve sustainable development there is undoubtedly an urgent
66 need to help facilitate policy change in that direction, and in recent years there has been a rise
67 in the creation and promotion of indices as a tool to help achieve this goal. Indices
68 (sometimes referred to as ‘composite indices’ or just ‘composites’) are defined as amalgams
69 of a number of individual indicators. The amalgamation can be relatively simple, as for
70 example an average of a few indicators (e.g. the Human Development Index), or more
71 complex perhaps involving dozens of indicators brought together with different weightings
72 (e.g. the Environmental Performance Index; EPI). Whatever the methodology, indices have
73 but one reason for their existence; they present complex data in the simplest way possible and

74 thus aim to provide a feed into such ‘First Order’ change by allowing non-specialists to
75 absorb complex datasets (Hezri and Dovers, 2006).

76

77 However, while much is known about the more technical aspects of such indices, notably the
78 assumptions made behind their creation, problems associated with those assumptions and the
79 pressing need for good quality data, there has been little research as to how they can feed into
80 the policy process. This is complicated by the fact that indices are often formulated to have a
81 wide target audience in mind, comprising politician, the media and indeed the general public.
82 Hence the publication of an index by their owners is often associated with the release of
83 colourful and attractive reports and ‘press packs’ designed to attract attention for the cause
84 being promoted by the index. The assumption is typically that the media will ‘use’ the indices
85 in their reporting and thereby raise attention for the cause that is being promoted amongst the
86 public, politicians and others. A good example of this is the publication of the ‘Living Planet
87 Reports’ by the World Wildlife Fund within which are ‘league tables’ of Ecological
88 Footprint. However, an interesting question to ask at this point is the extent to which such
89 reporting within the media actually occurs given that this is one of the assumed starting
90 points for engendering interest and influence? If it does, are there differences in both scale
91 and style between the reporting of indices? The latter is a logical expectation give that indices
92 are linked to different ‘issues’ and one would therefore expect to see them being reported in
93 different ways. These questions, and the paucity of publications that deal with them to date,
94 prompted the research behind this paper.

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96 The research reported here focussed on the reporting of three indices in the national
97 newspapers of the UK over a 20 year period (January 1990 to December 2009). The three
98 indices selected for the research were the Corruption Perception Index (CPI), Human

99 Development Index (HDI) and the Ecological Footprint (EF). These three indices have been
100 selected as they cover three quite different, yet inter-twinned, aspects of sustainable
101 development, namely economics (CPI), quality of life (HDI) and resource consumption (EF).
102 They are also well-established indices in the sense that they have been around for some years
103 (HDI since 1990; CPI since 1995; EF in various forms since the early 1990s), and each has a
104 powerful backer such as the World Wildlife Fund in the case of EF. Other alternatives, such
105 as the EPI referred to above, tend to be younger or have an exposure more limited to the
106 academic literature rather than having a wider audience in mind.

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108 It should be noted that a focus on reporting of these indices in the printed forms of national
109 newspapers cannot hope to encapsulate all of the exposure that they may have attracted
110 within the UK given the range of other media outlets that are available. Similarly, a focus on
111 the national newspapers of one country inevitably generates results that are specific to that
112 country. Also, there is the increasing importance of ‘press agencies’ and ‘public relations’
113 firms to consider. Many outlets (broadcast and printed media) now source their news from a
114 relatively small number of such sources and as a result some have questioned the degree of
115 independence that journalists now have as a result of this overlap (Lewis et al., 2008). Even
116 so, the use of newspapers as the basis for exploring reporting of indices has advantages.
117 Firstly, if indices are deemed by journalists and their editors to have value or if journalists
118 think that their readership will be interested in them then they will be reported (used)
119 otherwise they will not. Secondly the printed newspaper articles are archived in ways which
120 are readily accessible and analysable via text search engines. Thirdly the textual nature of
121 newspaper articles allows for an analysis that extends beyond a simple cataloguing as to
122 whether an index is mentioned in an article by encompassing the context of the reporting –
123 the ways in which an index may be described or used. Lastly there is already an extensive

124 literature on the adoption and reporting of important issues in the national newspapers of
125 various countries that can be built upon. For example, contentious and complex topics which
126 have been explored within the UK national and local press over the two years include climate
127 change (Nerlich and Koteyko, 2010), genetic modification (Augoustinos et al., 2010),
128 voluntary childlessness (Giles et al., 2009), maternity provision in the National Health
129 Service (Thomson et al., 2008) and asylum seekers (Finney and Robinson, 2008). There is
130 also a literature on the influence that newspapers have on policy makers, politicians and the
131 formulation of ‘public opinion’, although findings are often mixed and contradictory as
132 policy makers in turn try to influence the press (Callaghan and Schnell, 2001; Mortensen and
133 Serritzlew, 2006; Walgrave et al., 2008). Thus given this background it seems reasonable to
134 hypothesise that the three indices will be reported by the UK national newspapers although it
135 is possible that there may be differences between the indices in terms of the extent to which
136 they are employed and also the ways in which they are ‘used’. It should be noted that ‘use’ in
137 this context is limited to that made of the indices by the journalists and does not necessarily
138 reflect ‘use’ in terms of any change in instrument settings by policy makers.

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140

141 **Materials and methods**

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143 Some background on each of the three indices is provided as Table 1. The newspapers that
144 formed the basis for this research were those classified as ‘national’ in the NEWS UK
145 database (www.newsuk.co.uk) and comprises the publications listed in Table 2.

146

147 <Tables 1 and 2 near here>

148

149 In the NEWS UK database ‘National’ newspaper equates to a newspaper that is sold
150 throughout the UK although coverage may be patchy. Hence some newspapers may have a
151 regional focus (Scotsman, Scotland on Sunday) but are available at national scales. Also
152 shown in Table 1 is the classification of each of the newspapers by the Audit Bureau of
153 Circulations (ABC; www.abc.org.uk), with three categories; ‘popular’ (P), ‘mid-market’ (M)
154 and ‘quality’ (Q). To some extent the ABC categories reflect circulation figures and in Table
155 2 the ABC figures for May 2010 are presented. There is significant overlap between the
156 categories but by and large the ‘popular’ and ‘mid market’ newspapers have higher
157 circulation figures than do the ‘quality’ titles. Circulation of UK newspapers has varied over
158 time as a result of competition from other media outlets and trends for some titles between
159 2000 and 2009 are shown as Figure 1. Circulation of The Times was more or less constant
160 over the period while circulation of The Sun and Daily Mirror have shown a decline.

161

162 <Figure 1 near here>

163

164 The NEWS UK database was used to search the electronic editions of the newspapers listed
165 in Table 1 from January 1st 1990 to December 31st 2009. Keywords for the search were
166 ‘Corruption Perception Index’, ‘Human Development Index’ and ‘Ecological Footprint’.
167 After removing duplicates the number of stories (‘hits’) mentioning the index for each
168 newspaper and year were counted. The number of articles mentioning an index at least once
169 can be regarded as a measure of exposure of the index to the public via this medium although
170 it was necessary to provide some weighting for circulation. Table 1 includes the daily
171 circulation figures for May 2010 as well as a ‘Relative Circulation Index (RCI)’. The RCI
172 was found by dividing the daily circulation by the minimum circulation in Table 1, namely
173 that of the Sunday Herald (42,275). For example, the RCI for the Financial Times is 399,862

174 / 42,275 which equals 9.46. The RCI was then multiplied by the number of articles published
 175 each year to provide a value weighted by circulation.

176

177 The third variable calculated for each year was a ‘Diversity of Reporting’ index (H). This
 178 was calculated using the following modification of the Shannon equation and was based upon
 179 the number of articles published each year (unweighted for circulation):

180

$$H = - \sum_{i=1}^{i=S} p_i \log_2 p_i$$

181

182

183 Σ = ‘sum of’ (sum over all newspapers from 1 to S)

184 S = the number of newspapers carrying a story on the index in that year

185 \log_2 = logarithm to the base 2 (‘presence’ or ‘absence’)

186 p_i = the proportion of the total sample of newspaper stories mentioning the index for the i th
 187 newspaper such that:

188

$$p_i = \frac{n_i}{N}$$

189

190

191 where n_i is the number of stories mentioning the index in a year for newspaper i and N is the
 192 total number of stories mentioning the same index for that year. The greater the value of H
 193 then the greater the diversity of reporting. This allows the separation of a large article count
 194 due to perhaps one or two newspapers (low diversity) versus a similar count spread more
 195 evenly across a number of papers (high diversity), and may be an important issue as arguably

196 a greater diversity suggests that an index is being picked up and reported across a wider range
197 of newspapers and hence may suggest that the index is becoming embedded.

198

199 The text of all articles was reviewed to see whether it included a description of methodology
200 and/or assumptions that rest behind the index. The interpretation of ‘methodology’ was quite
201 liberal and could include, for example, a statement that the HDI has three components and a
202 brief listing as to what those components are. Similarly, the language surrounding the index
203 in each article was checked to see whether it used personal pronouns; ‘my’, ‘yours’, ‘our’,
204 ‘their’ etc. The latter was intended to identify whether the language was more impersonal and
205 mechanical or whether the index was being discussed as though it was ‘owned’ by someone.
206 In order to simplify the analysis a simple ‘yes/no’ categorisation was employed for
207 methodology and a sense of ownership.

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209

210 **Results**

211

212 Tables 3, 4 and 5 show the counts of articles mentioning the indices at least divided in terms
213 of the newspapers in which the articles appear and the year of publication. The results of a
214 linear regression analysis applied to the three variables at the foot of Tables 3, 4 and 5 are
215 shown in Table 6.

216

217 <Tables 3, 4, 5 and 6 near here>

218

219 The CPI (Table 3) had a statistically significant ($P < 0.001$) increase in the number of articles
220 between 1997 and 2009 (first CPI was released in 1995), with a peak of 19 articles per annum

221 in 2008. Adjusting the articles to allow for circulation still resulted in a statistically
222 significant ($P < 0.001$) increase with time. However, it should be noted that the Diversity
223 Index for the CPI was relatively low throughout the 13 years and there was no statistically
224 significant increase in 'H' with time. Indeed most of the CPI articles appear in the Financial
225 Times (68) followed by the Guardian (16). Together these two publications comprise 63% of
226 the total number (134) of articles that mention the CPI.

227

228 The HDI (Table 4) also has a statistically significant ($P < 0.001$) increase in the number of
229 published articles each year from 1992 to 2009 with a peak of 32 articles published in 2007.
230 Weighting for relative circulation still resulted in a statistically significant ($P < 0.001$)
231 increase over time. However, it is interesting to note that the values of 'H' were often larger
232 for the HDI than for the CPI. Indeed there was evidence to suggest that the values of 'H' for
233 the HDI showed a statistically significant ($P < 0.001$) increase over the 18 years of Table 4.
234 Thus the range of newspapers in which the HDI articles appear is wider than for the CPI, with
235 especial representation in the Guardian (75), Financial Times (56), Independent (32), Times
236 (20) and Observer (19). These five titles comprise 77% of the total number of articles (262).
237 Beyond these titles there are 12 others which have carried at least one article on the HDI.

238

239 As with the CPI and HDI the EF (Table 5) also showed a steady increase in the number of
240 articles from 1994 to 2009, with a peak of 73 articles per annum in 2006. Interestingly
241 between the peak of 2006 and 2009 the number of articles mentioning the EF has shown a
242 decline. However, applying a simple linear regression over the 16 years still yields a
243 statistically significant ($P < 0.001$) result. As with the other two indices, weighting the
244 articles for circulation made no difference to this significance. The values of 'H' for the EF
245 were the highest of the three indices and as with the HDI it had a statistically significant ($P <$

246 0.001) increase over time. The Guardian has a total of 94 articles mentioning the EF over that
247 period, almost a third (32%) of the total count of 290 articles, but significant numbers of
248 articles were also published in the Independent (33), Scotsman (22), Observer (28) and Times
249 (20).

250

251 It should be noted that for all three indices weighting the articles to allow for circulation
252 using the RCI had no effect in terms of the broad trend which was observed i.e. a statistically
253 significant linear increase over time. This is largely explained by a relative lack of reporting
254 the indices amongst titles that fall into the ‘popular’ and ‘mid-market’ categories of ABC
255 where circulations are highest. Counts of articles mentioning the three indices distributed in
256 terms of the classification of newspaper are shown as Table 7, where it can be seen that there
257 was no significant difference between the three indices suggesting that their pattern of
258 reporting was similar across the three categories of newspaper. This relative dominance of
259 articles within the ‘quality’ titles is illustrated over time by the graph in Figure 2.

260

261 <Table 7 and Figure 2 near here>

262

263 Table 8 is a categorisation of the articles based upon whether they also discuss the
264 construction of the index. There is no statistically significant difference between the indices
265 ($P > 0.05$) in terms of a discussion over construction. In each case the majority of articles
266 (some 75%) do not discuss, even in cursory terms, how the indices are constructed. Of those
267 that do mention what is in the index and/or its assumptions there is little detail. There was
268 also no statistically significant difference ($P > 0.05$) between the categories of newspaper in
269 terms of whether the articles mentioned construction of the index.

270

271 Table 9 shows the categorisation of the articles in terms of whether the indices are expressed
272 with a sense of personal ownership. The EF is more often associated with language that
273 implies a sense of ownership of the index (our, their, my, mine etc.) relative to the CPI and
274 HDI. Indeed for the HDI and CPI the vast majority of articles used the indices in impersonal
275 terms, yet for the EF nearly a third of articles express a sense of ownership. This difference
276 between the indices was statistically significant ($P < 0.001$). However, when re-arranged in
277 terms of ABC category of newspaper there was no significant difference ($P > 0.05$) between
278 them.

279

280 <Tables 8 and 9 near here>

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282

283 **Discussion**

284

285 All three of the indices have displayed an increasing presence in the press since the 1990s, be
286 it measured as number of articles (weighted for circulation or not) or indeed the diversity of
287 newspapers publishing articles that mention the indices. However it should be noted that the
288 number of articles mentioning the three indices is but a tiny fraction of the total number of
289 articles published in the national press each year. Therefore the extent of the reporting
290 summarised here has to be seen in context. Also, it has to be noted that the majority of the
291 articles have appeared in the quality press and circulation figures for these titles is
292 significantly lower than for the 'mid-market' and 'popular' categories.

293

294 Nonetheless, despite these caveats it is noteworthy that the EF has had more representation
295 over the 20 years than have the other two indices. The EF was mentioned in more articles

296 than were the CPI and HDI and the diversity of coverage was also greater. When assessed in
297 these terms the CPI had the least coverage of the three. It is also noticeable how the EF was
298 often discussed with a sense of ‘ownership’ compared to the CPI and HDI. The EF was often
299 associated with words such as ‘our’, ‘my/mine’ or ‘their’ which had a softer and more
300 personal feel than did the more impersonal and mechanical usage of the CPI and HDI. Even
301 those articles that did not mention a specific country were often talking about EFs of
302 individuals, households, companies, cities etc. located within the UK. Clearly the EF
303 embodied a concept which journalists could interpret and apply to themselves or to an entity
304 they were familiar or could resonate with, and that did seem to matter when it came down to
305 the number of articles and the diversity of reporting. It also has to be remembered that the
306 articles were not referring to a single EF (e.g. that of the WWF), as was the case with the HDI
307 and CPI, but to many forms of the index. Indeed it was sometimes difficult to make a
308 distinction within the articles between the EF as an index and the EF as a concept.

309

310 By way of contrast this sense of ownership (personalisation) associated with the EF did not
311 apply to the CPI and HDI. The HDI was often associated with the notion of ‘quality of life’
312 rather than human development as intended by UNDP, and this is perhaps understandable
313 given that ‘quality of life’ may be regarded as more familiar to a public readership than
314 ‘human development’ although they are arguably quite different. However, even within this
315 looser interpretation the HDI was very much regarded as something that applied to distant
316 others, and was often employed somewhat superficially as a quick and authoritative means to
317 highlight the extent of under-development (poverty) that a developing country or countries
318 suffer. Indeed it was sometimes listed at the end of the article along with other ‘vital
319 statistics’ for a country or region. Hence the language surrounding the HDI was more stark
320 and impersonal. **The fact that the HDI was regarded as ‘authoritative’ was no doubt aided by**

321 **its origin within the UN system.** The same points can be made for the CPI which was used as
322 a presumably convenient measure of corruption **which had been created by a non-**
323 **governmental pressure group (Transparency International) and thus had some authority.**

324

325 When it came to a description, even if only superficial, of the methodology, components or
326 assumptions behind the indices then it has to be said that this was weak across all three
327 indices and ABC categories of newspaper. The majority of articles simply stated the index
328 and its value with no attempt to enlighten the reader any further. This is, of course,
329 understandable given that the indices are complex and a journalist is unlikely to try and
330 follow the technical minutiae of an index let alone pack an article with that information, but it
331 does mean that the readership has to take them at face value as a sort of ‘black box’. This is
332 despite the fact that the creators of the indices do, in fairness, provide much technical detail in
333 their reports on the construction of their index and the key assumptions that rest behind it.
334 The absence of this more technical background within the newspaper articles means that
335 there is little opportunity for the reader to question the indices, and it should be noted that
336 there are some significant critiques of all three of them in the academic literature (Morse,
337 2003; Lind, 2004; Fiala, 2008; Andersson and Heywood, 2009). Newspapers may educate the
338 public but they can hardly be regarded as ‘social educators’ with an altruistic duty to provide
339 the pros and cons of indices they employ in their articles (Lacey and Longman, 1993).

340

341 What do these findings imply for any influence that this reporting in the press may have on
342 policy change? The results suggest that the EF was the most successful of the three indices in
343 terms of the extent, diversity and personalisation of reporting. In part this was because the EF
344 also embodied an idea rather than just an index. Hence the EF was often spoken of in the
345 first-person while the HDI and CPI were ‘used’ (reported) in a more mechanical and

346 impersonal sense. But transplanting these differences into the “*experience and new*
347 *knowledge*” discussed by Hall (1993) as necessary for ‘First Order’ change in policy is
348 difficult. The success of the EF in terms of attracting press attention may in theory be
349 reflected by a better ability to find its way into policy discourse at least when compared to the
350 HDI and CPI. After all the advantages of the EF in terms of its flexibility and embodiment of
351 an idea would equally be expected to resonate with policy makers, and indeed many of the
352 articles that mentioned the EF did so in terms of initiatives undertaken by national or local
353 governments or indeed by the private sector. Indeed this point is supported by the work of
354 Boezeman et al. (2010) who found that concepts within ecological economics have had an
355 influence in terms of influencing environmental policy in Holland, albeit sporadically, and
356 the EF has been especially successful. In part this was due to successful promotion of the
357 index to policy makers but also because the index was deemed to have “*rhetoric qualities and*
358 *imagery*” that helped in “*bridging the gap from scientific ecological knowledge to the (policy)*
359 *public in what initially appeared to be a consistent and easy-to-understand way.*” Together
360 these emerging strands of evidence collected from quite different locations within the causal
361 chain that can be assumed to affect policy making bode well for the EF to have an influence
362 in helping to bring about sustainable development. However, it is interesting to note the
363 decline of the EF in press reporting from a peak reached in 2006. Boezeman et al. (2010)
364 have also pointed towards a fall in ‘use’ of EF as a policy concept in Holland around the turn
365 of the century. Maybe the reporting and use of such indices has a cycle? Indeed there is need
366 for much more research on the ‘use’ of indices as despite all of the efforts made in generating
367 and promoting indices their usage remains an under-researched field. There seems little point
368 in creating and evolving indices if they do not make a significant contribution to experience
369 and new knowledge amongst those charged with bringing about change.

370

371 The research reported here provides many avenues for future research. For example, how do
372 these results compare with the reporting of other indices in the UK press and indeed is the
373 pattern reported here for the three indices repeated with press reporting in other countries? It
374 would also be interesting to compare reporting in different types of media. In addition to
375 these questions there are some broader issues which emerge from the use of indices by the
376 press, most notably whether they do impact upon the readership, bearing in mind that the
377 latter will include policy makers and researchers. The assumption typically made by the
378 creators of indices is that press reporting can be a catalyst for such influence but is that the
379 case?

380

381

382 **Conclusions**

383

384 The three indices have been reported in the UK national press from 1990 to 2009, but they do
385 differ in terms of their relative success (measured as the number of articles, weighted and
386 unweighted for circulation, and diversity). Of the three the EF does seem to have done better
387 in terms of being used to support arguments being made by the writers. It has appeared in
388 more articles and amongst a greater diversity of newspapers, and maybe this success is tied to
389 its greater flexibility (various forms of EF as well as a dual meaning of index and concept).
390 Maybe that is the challenge for those creating such indices - a need to keep in mind how they
391 will be reported and used by others and not just an emphasis on technical excellence (as
392 important as that undoubtedly is). If they are intended to be picked up by the mass media then
393 compromises will be required. Indeed given that the mechanics of the calculation were not
394 reported in the articles looked at for this research the argument may be more in favour of
395 developing indices that clearly relate to concepts that can 'matter' to people rather than

396 aiming for indices that are technically straightforward but which do not have resonance with
397 people's lives. After all, it is the people who come first – not the index.

398

399

400 **Acknowledgements**

401

402 The research leading to these results has received funding from the European Commission's
403 Seventh Framework Programme (FP7/2007-2013) under the grant agreement n° 217207
404 (POINT project, www.point.pb-works.com). The author would like to thank all of his
405 colleagues in POINT for providing support but especially Tom Bauler, Lea Sebastien and
406 Lars Petersen.

407

408 The author would also like to thank the two anonymous referees for their suggestions with
409 regard to the improvement of the paper.

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Table 1. The three indices employed in the research

Facet	CPI	HDI	EF
Creator	Transparency International	United Nations Development Programme (UNDP)	William Rees and Mathis Wackernagel at the University of British Columbia, Canada
	A non-governmental organisation	International agency	Academic work later picked up and adapted by a number of agencies
Issue being captured	Corruption	Human development	Consumption
Reporting	Annual report (1990 on)	Annual Report (1995 on)	Biannual report (2000 on)
Organisation	Transparency International (an NGO)	United Nations Development Programme (UNDP) for the global reports	Global Footprint Network (GFN) and World Wildlife Fund (WWF) for the global reports
Reporting scale	Nation state	Nation state Variants exist for some regions spanning a number of countries and states within a single country	Nation state Many scales, even to the level of the household and individuals
Units	None	None	Yes – global hectares (gha)
Components	Based upon the results of various corruption surveys (all based upon perception of corruption)	Three components: 1. life expectancy 2. education 3. disposable income (proxied by GDP/capita).	Latest version of the EF used by WWF has the following components: 1. crop land 2. grazing land 3. forest land 4. fishing 5. built-up land 6. carbon uptake land
References	Morse (2006) Andersson and Heywood (2009)	Booyesen (2002) Morse (2003) Lind (2004)	Fiala (2008) Venetoulis and Talberth (2008) Siche et al. (2008)

Table 2. Newspapers included in the survey and their daily circulation (May 2010; data supplied by ABC).

Newspaper	ABC Classification	Circulation (May 2010)	Relative Circulation Index (RCI) *
The Daily Express / The Express on Sunday	M	663,627 / 568,247	15.7 / 13.44
Daily Mail / The Mail on Sunday	M	2,090,469 / 1,918,512	49.45 / 45.38
The Daily Mirror / The Sunday Mirror	P	1,238,145 / 1,148,107	29.29 / 27.16
Daily Record / Sunday Mail	P	328,618 / 389,218	7.77 / 9.21
The Sun	P	2,936,099	69.45
The Daily Telegraph / The Sunday Telegraph	Q	698,456 / 512,819	16.52 / 12.13
Financial Times	Q	399,862	9.46
The Guardian	Q	300,472	7.11
The Herald / Sunday Herald	Q	54,943 / 42,275	1.3 / 1.0
The Independent / The Independent on Sunday	Q	194,501 / 164,188	4.6 / 3.88
The Observer	Q	340,247	8.05
Scotland on Sunday	Q	57,057	1.35
Scotsman	Q	45,352	1.07
The Times / The Sunday Times	Q	515,379 / 1,117,749	12.19 / 26.44

M Mid-market
P Popular
Q Quality

* RCI is circulation expressed relative to that of the Sunday Herald (the lowest circulation in May 2010)

Table 3. Articles mentioning the Corruption Perception Index (CPI) at least once between 1990 and 2009.

Publication	Year													Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Daily Mail											1	2		3
Daily Record				1										1
Financial Times			1	2	4	5	4	10	6	11	11	10	4	68
Scotland on Sunday			1			1								2
Scotsman									1					1
The Daily Mirror				1					1					2
The Daily Telegraph									1			3	2	6
The Daily Express								1						1
The Guardian			2	2	3	2	1	1		2		2	1	16
The Herald							1							1
The Independent			1			1				1	2			5
The Independent on Sunday													1	1
The Observer					1									1
The Sun						1				1				2
The Sunday Telegraph										1		1		2
The Sunday Times													1	1
The Times	2		1		1	5	1	3	4	1		1	2	21
Total	2	0	6	6	9	15	7	15	13	17	14	19	11	134
Total (articles weighted for circulation)	24.38	0	41.8	70.2	79.4	198	58.4	154	152	217	163	282	133	
Diversity Index	0	0	2.25	1.92	1.75	2.23	1.66	1.38	1.89	1.73	0.95	2.04	2.37	

Table 4. Articles mentioning in the Human Development Index (HDI) at least once between 1990 and 2009.

Publication	Year																		Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Daily Mail							1						1	1		2	1	1	7
Financial Times								2	9	3	5	4	7	7	3	6	4	6	56
Scotland on Sunday										2	1				1	1			5
Scotsman											1		1					1	3
Sunday Herald												1					1		2
The Daily Mirror							1	1	1		1						3	1	8
The Daily Telegraph													1	1		3	1	2	8
The Daily Express										1		2	1	1					5
The Guardian			1	3	1	4	6	5	4	2	5	2	4	10	8	5	7	8	75
The Herald								1	1		1	1	1	2	3	1	1		12
The Independent				2	2	2	1				2	1		2	5	7	4	4	32
The Independent on Sunday				1				1			1	1						1	5
The Mail on Sunday														1			1		2
The Observer					1	1	2		2	2	2					1	8		19
The Sunday Mirror											1								1
The Sunday Times		1																1	2
The Times	2			1			1		1		1	3	1	2		4	1	3	20
Total	2	1	1	7	4	7	12	10	18	10	21	15	17	27	20	30	32	28	262
Total (articles weighted for circulation)	24.4	26.4	7.11	46.6	24.4	45.7	154	88.9	172	77.1	184	131	191	301	114	332	384	312	
Diversity Index	0	0	0	1.84	1.5	1.38	2.13	1.96	2.03	2.25	3.1	2.79	2.46	2.57	2.07	2.86	2.99	2.87	

Table 5. Articles mentioning in the Ecological Footprint (EF) at least once between 1990 and 2009.

Publication	Year																Total
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Daily Mail					1						1	1	3	5	1	4	16
Daily Record									1				1	1		1	4
Financial Times									2	1	1	1	1	1	3	3	13
Scotland on Sunday														1			1
Scotsman								1			3	1	5	6	4	2	22
Sunday Herald											2			1			3
The Daily Mirror													1	1	1		3
The Daily Telegraph								2			2	1	1	1	4	1	12
The Daily Express													3				3
The Guardian	3	2	3	2	2	1	2	3	4	4	6	7	22	10	12	11	94
The Herald							1		2	1	2	1	8	4	3		22
The Independent				1					3		1	9	12	1	3	3	33
The Independent on Sunday											1				1		2
The Mail on Sunday														1			1
The Observer									1		3	5	8	7	2	2	28
The Sunday Mirror													1			1	2
The Sunday Telegraph									1								1
The Sunday Times									1				3	2	2	2	10
The Times		1				1	1	2		1	1	4	4	2	1	2	20
Total	3	3	3	3	3	2	4	8	15	7	23	30	73	44	37	32	290
Total (articles weighted for circulation)	21.3	26.4	21.3	18.8	63.7	19.3	27.7	79.8	118	51.4	187	258	706	579	366	465	
Diversity Index	0	0.92	0	0.92	0.92	1.0	1.5	1.91	2.79	1.66	3.17	2.65	3.14	3.37	3.12	3.01	

Table 6. Results of a linear regression analyses performed on the original article count data, article counts adjusted for circulation (as of May 2010) and a diversity index.

		CPI		HDI		EF	
		Coefficient (SE)	t-value and significance	Coefficient (SE)	t-value and significance	Coefficient (SE)	t-value and significance
Original counts of articles	Intercept	-2433(530)	-4.59 ***	-3586 (319)	-11.24 ***	-6657 (1436)	-4.63 ***
	Slope	1.22(0.26)	4.61***	1.8 (0.16)	11.29***	3.34 (0.72)	4.65 ***
Article counts adjusted for circulation	Intercept	-33807 (7888)	-4.29 ***	-38650 (5437)	-7.11 ***	-75425 (14900)	-5.06 ***
	Slope	16.93 (3.94)	4.3 ***	19.39 (2.72)	7.14 ***	37.78 (7.44)	5.07 ***
Diversity Index	Intercept	-197 (106)	-1.86 ns (P=0.09)	-323 (49.34)	-6.55 ***	-455 (48.61)	-9.36 ***
	Slope	0.1 (0.05)	1.87 ns (P=0.09)	0.16 (0.02)	6.58 ***	0.23 (0.02)	9.4 ***

*** P < 0.001

ns = not significant at 0.05

Table 7. Articles mentioning the indices for different types of newspaper.

Observed counts with expected counts in parentheses.

ABC Classification	CPI	HDI	EF	Total
Popular	5 (4.49)	9 (8.78)	9 (9.72)	23
Mid-market	4 (6.84)	14 (13.37)	17 (14.8)	35
Quality	125 (122.67)	239 (239.85)	264 (265.48)	628
Total	134	262	290	686
	Chi-Square = 1.71 ns (df = 4)			

ns = not significant at 0.05

Table 8. Counts of articles across the three ABC categories of publication that include some comments on the construction of the indices.

Observed counts with expected counts in parentheses.

ABC Classification	CPI		HDI		EF		Sum of all three indices		Total
	N	Y	N	Y	N	Y	N	Y	
Popular	3	2	5	4	6	3	14 (17.33)	9 (5.67)	23
Mid-market	3	1	10	4	10	7	23 (26.38)	12 (8.62)	35
Quality	102	23	175	64	203	61	480 (473.29)	148 (154.71)	628
Total	108 (100.99)	26 (33.01)	190 (197.45)	72 (64.55)	219 (218.56)	71 (71.44)	517	169	686

Chi-square = 3.12 ns (df = 2)

Chi-Square = 4.75 ns (P = 0.093) (df = 2)

ns = not significant at 0.05

Table 9. Counts of articles across the three ABC categories of publication that include a sense of ‘ownership’ of the indices.

Observed counts with expected counts in parentheses.

ABC Classification	CPI		HDI		EF		Sum of all 3 indices		Total
	N	Y	N	Y	N	Y	N	Y	
Popular	3	2	9	0	5	4	17 (19.92)	6 (3.08)	23
Mid-market	4	0	14	0	10	7	28 (30.31)	7 (4.69)	35
Quality	124	1	237	2	188	76	549 (543.78)	79 (84.22)	628
Total	131 (116.03)	3 (17.07)	260 (226.86)	2 (35.14)	203 (251.11)	87 (38.89)	594	92	686

Chi-square = 119.22 *** (df = 2)

Chi-square = 4.87 ns (P=0.088) (df = 2)

*** P < 0.001

Figure legends

Figure 1. Trend in the daily circulation of some national UK newspapers between 2000 and 2009 (data supplied by ABC).

Figure 2. Number of newspaper articles mentioning the CPI and/or HDI and/or the EF published between 1992 and 2009. Articles have been summed over the three ABC categories of 'popular', 'mid-market' and 'quality'.