Measuring News Media Sustainability

Towards a Global Barometer

Pilot Study, December 2018

We believe that the Media Sustainability Barometer will enable us to have an informed conversation about the impact and role of journalism and quality media, in the age of digital convergence.

Mira Milosevic

Executive Director, Global Forum for Media Development, representing more than 190 journalism support and media development actors worldwide with a consultative status to the United Nations Economic and Social Council (ECOSOC)

We are pleased to present the Media Sustainability Barometer (MSB). This pilot study is offered with a view to producing an ongoing, broad-based, quantitative tool to measure, monitor and model the forces shaping media sustainability globally. We anticipate that media leaders, policy makers and other development actors will make use of the MSB, and incorporate it into their evidence-based strategic planning. This pilot edition focuses on an exploration of media sustainability factors in relation to the UK, in the context of the G7 bloc of highly industrialised nations, as well as the BRICS association of major emerging economies.

Dr François Nel & Dr Coral Milburn-Curtis,

authors of this report and developers of the Media Sustainability Barometer in collaboration with GFMD

innovation research group

GFMD

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Acknowledgment: This publication was made possible through support provided by the Google News Initiative and the Global Forum for Media Development.

PREFACE

Mira Milosevic

Executive Director, Global Forum for Media Development

"There is hardly an aspect of public information ecosystems, journalism and news media work that hasn't been challenged by ongoing tectonic shifts in economic, political, social and technological environments. Yet longitudinal data and studies on how these changes impact public information spaces, journalism and news media, and their correlation with overall global development are rare.

We believe that the Media Sustainability Barometer will enable us to have an informed conversation about the impact and role of journalism and quality media in the age of digital convergence. We need to be able to 'measure what matters' and the Media Sustainability Barometer is an important step towards achieving this in the media field.

GFMD will use the Media Sustainability Barometer to ensure that discussions on the future of journalism, news media and public information systems - from how content is curated and moderated on the Internet, to the way global platforms are shaping digital economy and impacting media viability - are informed by comparative data and in depth analysis."

ABOUT GFMD

Global Forum for Media Development (GFMD) is a not-for-profit network of more than 190 journalism support and media assistance groups in some 70 countries, established in 2005. Its secretariat is based in Brussels, where it is registered as a ASBL (association sans but lucratif /association without lucrative purpose).

Formally granted special consultative status by the United Nations Economic and Social Council (ECOSOC) in 2018, GFMD has a unique, neutral and trusted position which allows it to bring together all the major actors in media development, local and regional media assistance groups and the representatives of nascent media sectors to reach a common understanding of needs and priorities.

The GFMD's core value is to support the creation and strengthening of journalism and free, independent, sustainable and pluralistic news ecosystems, as defined by the declarations of UNESCO at conferences in Windhoek, Almaty, Santiago de Chile, Sana'a and Sofia.

www.gfmd.info

"Although media viability is such a pressing and much-discussed topic, there have not been sufficient efforts to comprehensively evaluate – and thereby better understand and actively pursue – this complex issue."

Laura Schneider, Ann Hollifield and Jan Lublinski

...on why UNESCO and Deutsche Welle (DW) teamed up to propose a framework of Media Viability Indicators in 'Measuring the Business Side: Indicators to Measure Media Viability', 12/2016.

"The [Cairncross] review's objective is to establish how far and by what means we can secure a sustainable future for high-quality journalism, particularly for news. Looking ahead to 2028, how will we know if we have been successful?"

The Cairncross Review

Call for evidence on the sustainability of high-quality journalism in the UK, 06/2018.

UN Sustainable Development Goal 16.10: "Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements"

The 2030 Agenda for Sustainable Development,

adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership.

Executive Summary

Context

UNESCO and others concerned with the sustainability of the news media worldwide have recognised that if this issue is to be managed, it needs to measured and monitored. Over the last three years, several frameworks for media viability indicators have been proposed. However, calls for their implementation have not been answered - until now.

This document reports on the construction and operationalisation of a proposed annual Media Sustainability Barometer (MSB). The MSB is a quantitative index offered as a tool to both measure and monitor the media ecosystem, in terms of its sustainability across key contributing forces - and much more. This tool has the power to model how changes in the ecosystem impact on media sustainability in specific countries or blocs, and also to estimate how the media environment impacts on other spheres of society, including those identified in the UN Sustainable Development Goals.

As such, it addresses the gap in existing initiatives, by bringing together mixed-source media viability indices proposed by UNESCO, Deutsche Welle Akademie and others, into one objectively derived quantitative index. In doing so, it offers the opportunity to analyse and understand the complex dynamics amongst spheres of society that shape, and are shaped by, a sustainable, pluralistic and diverse media sector.

Key findings

This pilot study into factors shaping the sustainability of the UK media in the context of the G7 bloc of highly industrialised nations noted that the single biggest influence was the political environment as indicated by World Bank databases on control of corruption[1]; political stability[2]; strength of governance[3]; voice and accountability[4] and regulatory quality[5]. In other words, the more stable the political situation in a country, the more sustainable the media. Of the components of this factor, the element which makes the most significant contribution to the political environment is regulatory quality. Almost as significant, as an influence on media sustainability, is the environment in which the media operate - specifically press freedom; trust in the media, journalists and platforms; innovation; journalistic autonomy, influence and advocacy and plurality. This emphasises the need for greater scrutiny of policy and regulation across the range of environments - direct media policies, certainly, but also related policies on economics, justice, technology and social inclusivity, which all impact on media sustainability.

Evaluation

This pilot study demonstrates that the MSB can model a range of factors that contribute to the sustainability of the media - in any one country, group or region - in any one year, or as an analysis of trends over time.

The MSB is constructed using globally indexed data and expert panel survey contributions, and is represented as a) separate indices for each country and region, for a large range of relevant variables, b) a single MSB index for 264 countries, plus regions and World Bank Territories, and c) aggregated factors that contribute to the overall MSB. In particular, it seeks to address the gap in existing media viability indices by modelling underlying contextual factors, such as the economic, political, legal, social, technological and digital environments that impact on the media.

Using the statistical technique of structural equation modelling, individual measured variables are modelled into latent constructs, which then estimate statistically the predictive relationships between different aspects of the media sustainability ecosystem.

Conclusions

In this pilot, we explain how the MSB has been created and how to use it to explore media sustainability in the UK, in the context of the G7 and the BRICS blocs, but stress that it can be used to model media sustainability for any country, region, geographic or economic group.

We demonstrate how the MSB can be used to model the media sustainability ecosystem by offering relevant examples created using the new index. The initial findings provide some early headline measures that could be used to understand how and where current international and national contexts, and potential interventions, can or do make a difference to media sustainability. Similarly, our early findings suggest opportunities to consider media sustainability efforts as a means to shape other areas of national, and international, public life.

Developed by the Innovation Research Group (IRG), in collaboration with the Global Forum for Media Development (GFMD) and with further support from the Google News Initiative, the MSB offers the opportunity to address the existing shortcomings in the objective measurement and monitoring of the media environment, with a view to helping those acting in these areas do so with better information.

Wider recommendations

This pilot study shows that media and communications policies are central to many of the social and political issues societies face today. In doing so, it invites questions about whether policies pursued in the past are fit to respond to rapid changes and complexities of contemporary social and digital contexts. It suggests the need for a companion benchmarking study to understand and evaluate the current state of media policy within and across countries and regions, in order to identify best practice and to shed light on areas and means of performance improvement.

1 https://info.worldbank.org/governance/wgi/pdf/cc.pdf

2 https://datacatalog.worldbank.org/political-stability-and-absence-violenceterrorism-estimate

3 http://info.worldbank.org/governance/wgi/pdf/wgi.pdf

4 https://openknowledge.worldbank.org/handle/10986/3913

5 http://info.worldbank.org/governance/wgi/pdf/wgi.pdf

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Introduction: The Core Challenge

As news media worldwide continues to face an uncertain future, its sustainability has not only become of particular concern to policymakers and professionals in developing economies - but also to those in highly developed economies too.

Whilst there are individual indices that can measure and rank specific aspects of a nation's media system, such as Reporters Without Borders, Freedom House and IREX, there is a major gap in the measurement of media sustainability. It's been recognised that, 'even UNESCO's comprehensive Media Development Indicators (MDIs), consisting of 50 key indicators and 190 sub-indicators, lack criteria dealing with media viability.'[6] That is why UNESCO collaborated with Deutsche Welle (DW) to propose a framework of Media Viability Indicators (MVIs) - which is yet to be piloted.

The need to better understand the factors shaping the news media industry has also been widely recognised in the UK. In 2018, the Government launched an inquiry into the sustainability of news publishing, chaired by Dame Frances Cairncross. The Cairncross Review set out to establish how far, and by what means, a sustainable future can be secured for high-quality journalism, particularly for news. Furthermore, the Review asked: "Looking ahead to 2028, how will we know if we have been successful?"

This pilot study of factors shaping media sustainability in the UK, in the context of the G7 and the BRICS blocs of nations, sets out to address that question - and more.

Working in collaboration with the Global Forum for Media Development and with further support from the Google News Initiative, the Media Sustainability Barometer draws on, among others, frameworks first proposed by UNESCO and Deutsche Welle Akademie, as well as the UN Sustainable Development Goals.

In doing so, the researchers share UNESCO and DW Akademie's view that media viability is not limited to financial sustainability (i.e. economic survival), but also the ability and capacity of media outlets to produce high-quality journalism in the long term. This means that national political, economic, social, technological and legal conditions must provide a supportive environment for the emergence, development and continuance of the news media industry, as it strives to provide relevant content that informs the public, holds power to account, enables participation and facilitates dialogue. Furthermore, the news media industry must act in ways that promote its own sustainability.

The Media Sustainability Barometer draws on data from 18 database sources and a panel survey, and employs advanced statistical methods to construct a quantitative index to measure and model the media ecosystem.

6 https://www.dw.com/downloads/36841789/dw-akademiediscussion-papermedia-viability-indicators.pdf

What is the Media Sustainability Barometer?

The Innovation Research Group's Media Sustainability Barometer (MSB) is an annually reviewed index which offers a basis for a range of analyses, based on an aggregated media sustainability score for each of 264 countries, regions and geographic or economic groups. It is a means of mapping - and modelling - the ecosystem of media sustainability. It provides not only descriptives and comparisons, but also a method of exploring the connective and predictive relationships between the factors which have the most influence on media sustainability - unique to the field.

Developed in cooperation with the Global Forum for Media Development (GFMD), it is an international database of more than 280 variables, offering a means to provide a range of benchmarks with which to measure the evolving nature of media sustainability over time.

The aim of the MSB is to become the most trusted, comprehensive and reliable measure of media sustainability. It will continue to be added to, incorporating newly acquired data as they are published. This first edition is complemented by the viewpoints of a global panel of local experts, asked to evaluate the state of media sustainability in their own countries. They highlight the relevant issues, threats and stresses that impact on media sustainability in their locality. For this pilot report, we have focused on the perspectives of media experts in G7 and BRICS countries.

The MSB will provide:

a) individual, country-level media sustainability scores, enabling comparative analysis between countries and facilitating the exploration of trends over time.

b) individual, country-level scores across any of the 280+ variables, and combinations of such.

c) a measure of the building blocks that contribute to the construction of the MSB, enabling policymakers, civil society, governments and media specialists to make evidence-based evaluations of the diverse aspects of media sustainability.

d) country-level, bespoke contextual analyses, supported by the opinions of local media experts.

e) descriptive, correlational, inferential (predictive) and structural modelling analyses of factors that underpin media sustainability, such as:

f) PESTLE factors - political, economic, social, technological, legal and the media environment

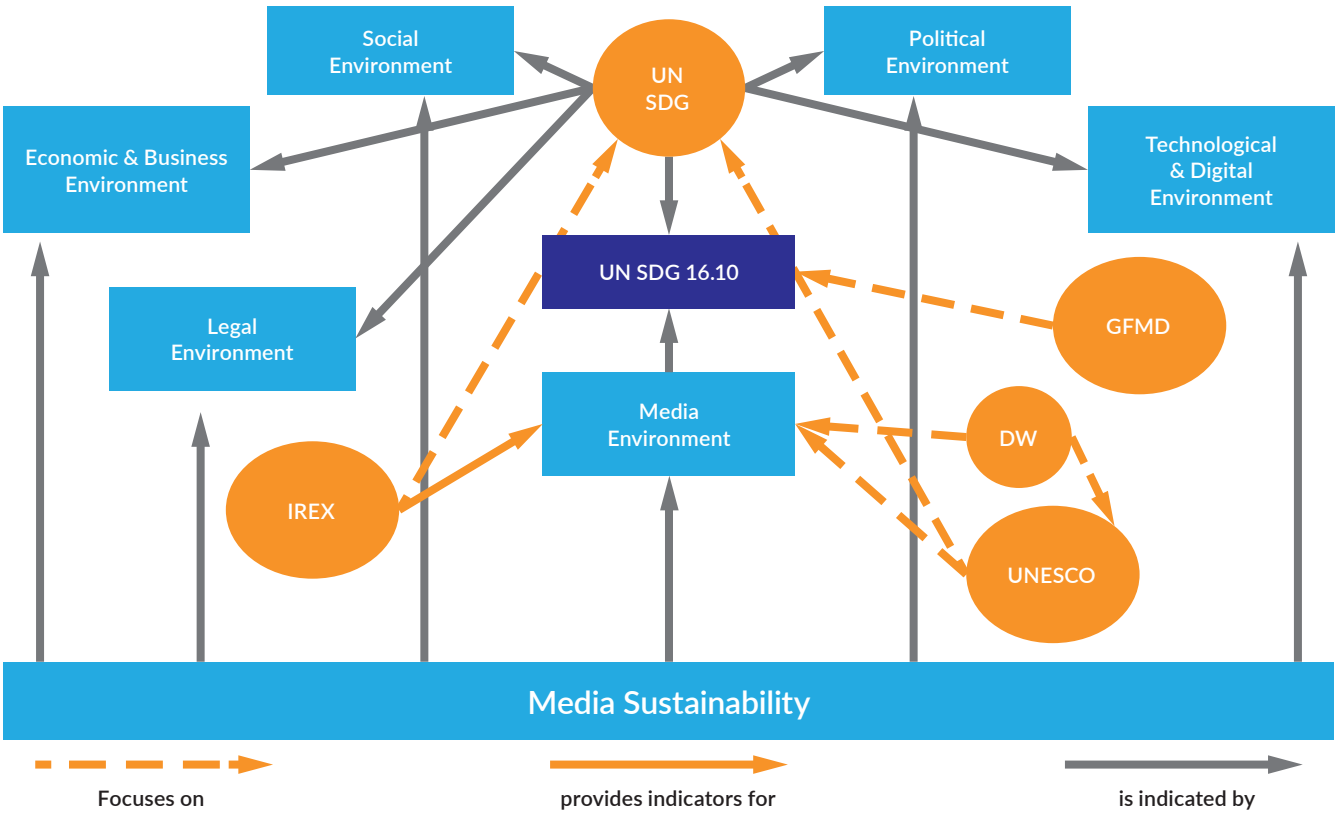
   i) United Nations Sustainable Development Goals

   ii) UNESCO Media Viability Indicators

   iii) Deutsche Welle Media Viability Indicators.

The Media Sustainability Barometer Conceptual Framework

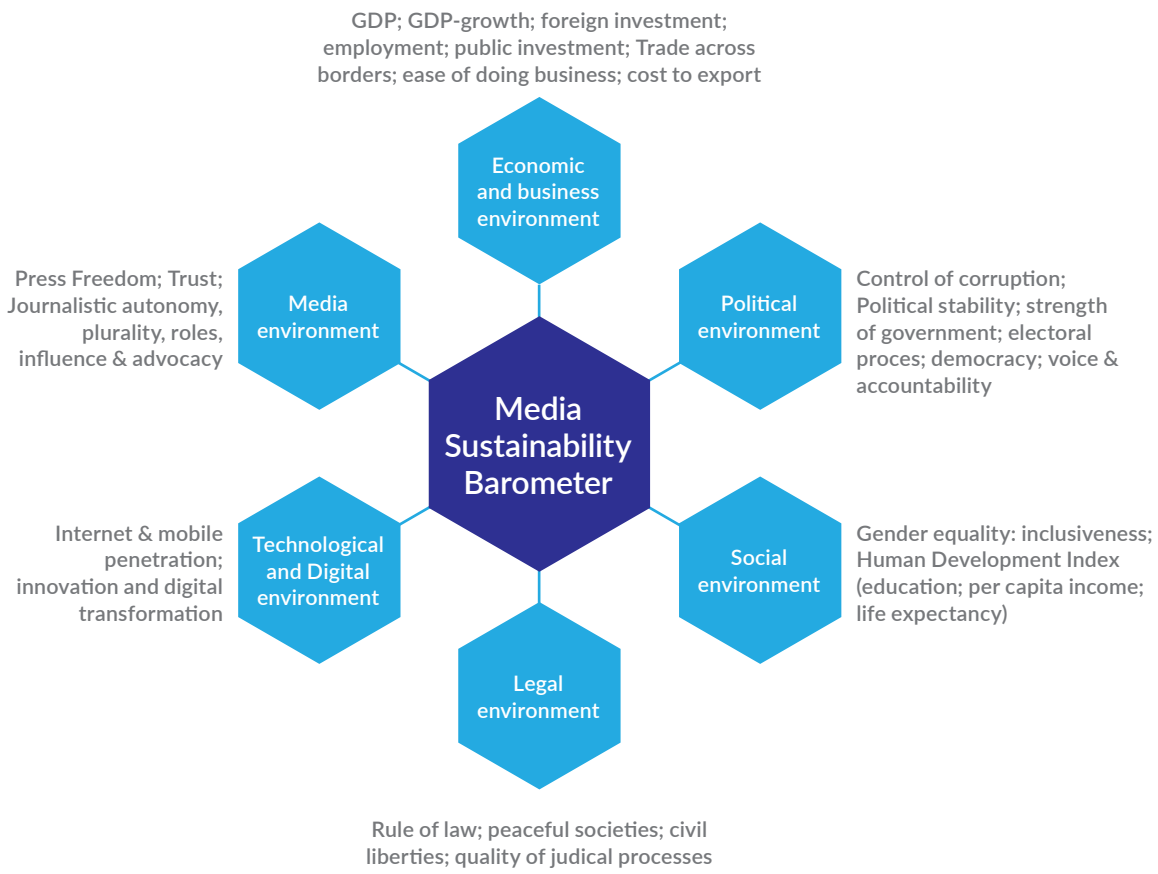
This conceptual framework is informed by a number of others, including the United Nations Sustainable Development Goals (focus: political, economic, social, legal environments and 'a sustainable future for us all'), UNESCO (focus: freedom of expression, pluralism and diversity of the media), Global Forum for Media Development (focus: sustainable and pluralistic news ecosystem), Deutsche Welle Akademie Media Viability Indicators (focus: economic, social and business aspects of media viability) and IREX (focus: freedom of speech, professional journalism, plurality of news and business management). We employ the PESTLE analytical frame (political, economic, social, technological, legal and environmental) to incorporate the above frameworks, and specify the media environment as the sixth 'environment' factor.



The six factors are:

1. **Political environment**
   (e.g., control of corruption; political stability; strength of governance; voice and accountability; regulatory quality)
2. **Economic environment**
   (e.g., GDP; GDP growth; foreign investment; employment; public investment)
3. **Social environment**
   (e.g., gender equality; inclusiveness; Human Development Index (education; per capita income; life expectancy))
4. **Technological and digital environment**
   (e.g., internet and mobile penetration; innovation and digital transformation (the ratio of digital revenues to overall revenues))
5. **Legal environment**
   (e.g., rule of law; peaceful societies; civil liberties; quality of judicial processes)
6. **Media environment**
   (e.g., press freedom; innovation; trust; journalistic autonomy; plurality; influence and advocacy).

Media Sustainability Barometer (MSB)



Data Sources

Data are drawn from two areas :

A variety of databases and indices compiled by international organisations, research groups and industry bodies, including:

Chartbeat	**Political Risk Group**
Edelman Trust Barometer	**PwC**
Freedom House	**Reporters Without Borders**
Global Innovation Index	**Transparency International**
Harvard University	**World Bank**
Human Development Index	**Worlds of Journalism Study**
IPSOS	**World Justice Project**
ITU, International Telecommunication Union.	**World Press Trends**
OECD, Organisation for Economic Co-operation and Development	**Zenith**

A panel survey of media experts, based in G7 and BRICS countries:

The panel survey (http://bit.ly/2Sqdc0L) was completed by experts from the following countries: **G7:** Canada, France, Germany, Italy, Japan, UK and USA **BRICS:** Brazil, Russia, India, China and South Africa

Please score the extent to which you agree or disagree with the following statements as they apply to YOUR COUNTRY, on a scale of 1 to 10

1: Media statistics in my country are reliable and independently produced.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

2: State media is unbiased, non-partisan and fairly serves the needs of the general public.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

3 Journalists have unrestricted access to independent news agencies, both national and international

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

4: Independent media (e.g., bloggers) can produce their own news unrestricted.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

5: Media outputs reflect the diversity of the population of the country, in terms of both culture and language.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

6: Communities have unrestricted access to reliable, independent news about NATIONAL issues.

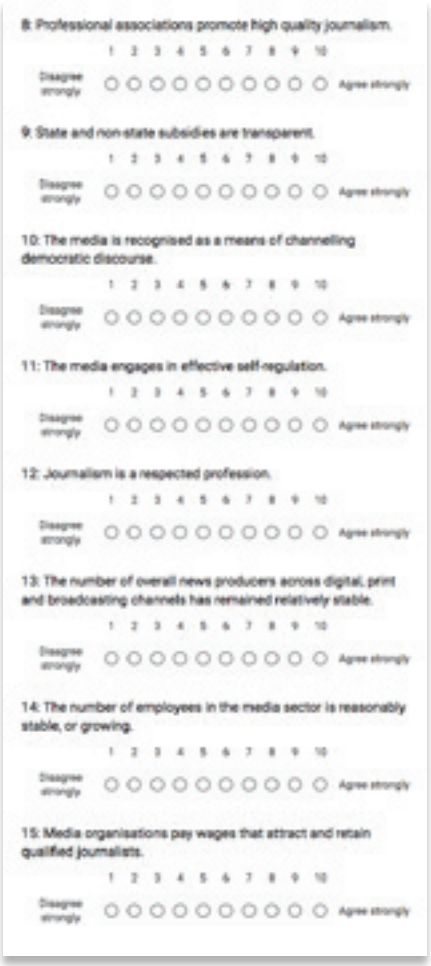
1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

7: Communities have unrestricted access to reliable, independent news about LOCAL and REGIONAL issues.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly



8: Professional associations promote high quality journalism.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

9: State and non-state subsidies are transparent.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

10: The media is recognised as a means of channelling democratic discourse.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

11: The media engages in effective self-regulation.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

12: Journalism is a respected profession.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

13: The number of overall news producers across digital, print and broadcasting channels has remained relatively stable.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

14: The number of employees in the media sector is reasonably stable, or growing.

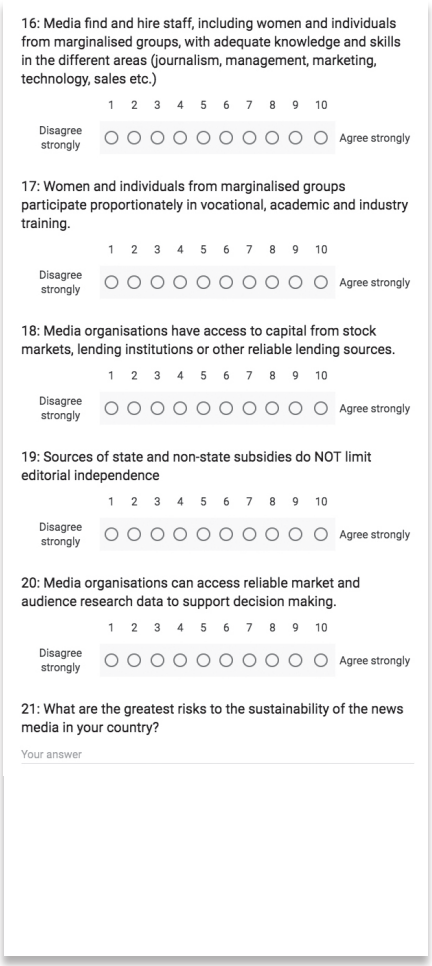
1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

15: Media organisations pay wages that attract and retain qualified journalists.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly



16: Media find and hire staff, including women and individuals from marginalised groups, with adequate knowledge and skills in the different areas (journalism, management, marketing, technology, sales etc.)

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

17: Women and individuals from marginalised groups participate proportionately in vocational, academic and industry training.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

18: Media organisations have access to capital from stock markets, lending institutions or other reliable lending sources.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

19: Sources of state and non-state subsidies do NOT limit editorial independence

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

20: Media organisations can access reliable market and audience research data to support decision making.

1 2 3 4 5 6 7 8 9 10

Disagree strongly ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Agree strongly

21: What are the greatest risks to the sustainability of the news media in your country?

Your answer

Data Analysis Methodology

Data were analysed using the statistical packages SPSS and AMOS, and tests included:

- T-tests (for two-group analysis) e.g., 'does media sustainability differ significantly when comparing the developed and the developing world?'
- Analysis of variance (for multiple group comparisons) e.g., 'are there regional differences in media sustainability?'
- Correlation (for exploring binary relationships) e.g., 'is there a significant relationship between press freedom and media sustainability?'
- Regression (for exploring predictive relationships) e.g., 'can media revenues be predicted by the level of electoral integrity of a country?'
- Structural equation modelling (for modelling the media sustainability ecosystem) e.g., 'what factors impact on media sustainability and how are they related to each other?'

Missing data were imputed using the multiple imputation process in the statistics package SPSS. Thus analyses were performed on a complete dataset of 264 cases (countries, regions and geographical or economic groups).

Data were standardised into percentile ranks before being averaged across factors. Thus each variable ranges from 0 to 100. Negatively coded items were reverse coded if theoretically appropriate, to ensure that higher numbers reflect the more desirable score (e.g., 'corruption perception' is traditionally coded such that the higher the figure, the more likely the corruption, so reverse coding is required).

The proposed methodology is to be reviewed each year, in collaboration with the Global Forum for Media Development.

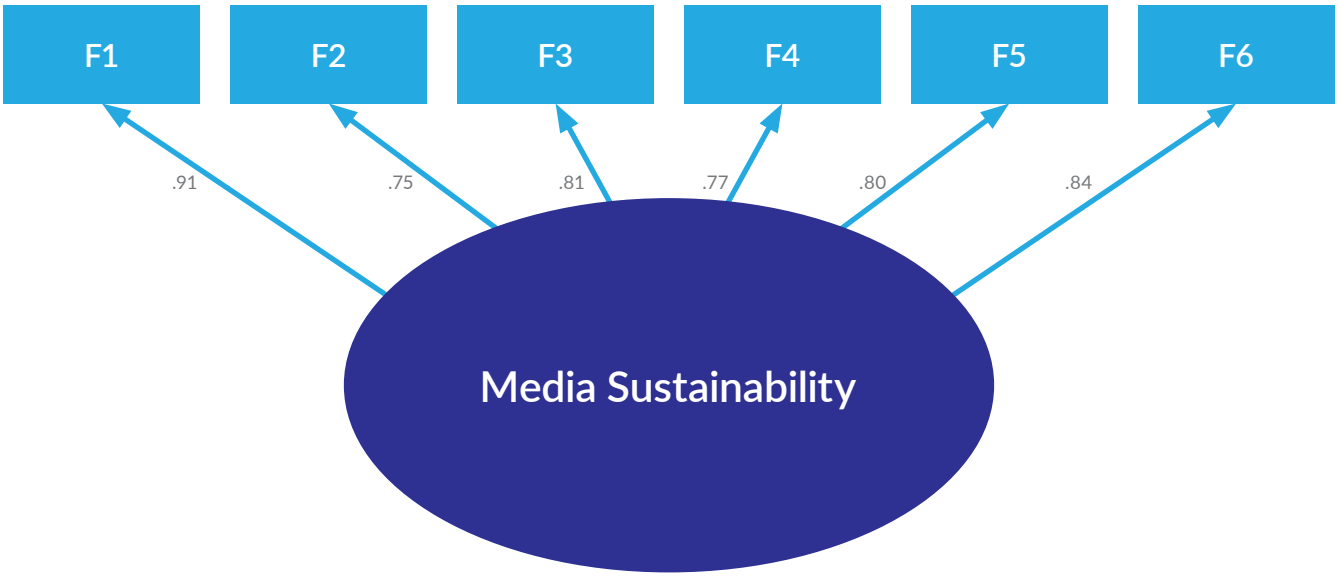
Modelling Media Sustainability

This pilot looks at the UK in the context of the G7. Using data from all six PESTLE factors, and incorporating the panel survey data into the sixth factor (the media environment), we can model the strength of influence of each of the factors on media sustainability for this particular group of countries.

We find that, for countries in the G7, the greatest influence on media sustainability is the political environment (e.g., control of corruption; political stability; strength of governance; voice and & accountability; regulatory quality). This is followed by the media environment (press freedom, trust and innovation), and the social environment (e.g., gender equality; inclusiveness; the Human Development Index (education; per capita income; life expectancy)). For other countries and regions, the balance may change.

Notes on the model: The Media Sustainability Scale was subject to exploratory factor analysis (maximum likelihood estimation) and tested for reliability and validity. All factor loadings were significant and greater than .63 The Kaiser Meyer Olkin measure, which reports on the adequacy of the sample size for factor analysis was good at .86. The total variance explained by the factor was 67.9% and the Cronbach's alpha, a measure of reliability, was .90. Correlations between manifest items ranged from .4 to .73. Confirmatory factor analysis using AMOS established that the model was a good fit to the data: chi2(9) = 113.9; CFI: .91; TLI: .90, with standardised regression weights ranging from .63 to .89. These indices suggested that this measurement model explained the data very well.

FIGURE: Simplified representation of a structural equation model, demonstrating the relationship between PESTLE factors and media sustainability.



The Pilot Study: Measuring Media Sustainability in the G7 and BRICS

Data for the pilot refer to the G7 bloc of highly industrialised nations (Canada, France, Germany, Italy, Japan, UK, USA) and the BRICS bloc of major emerging economies (Brazil, Russia, India, China and South Africa).

Data have been gathered for these countries across 283 variables, plus panel survey data. Scales have been aggregated into the six factors:

Factor 1: Political environment: global datasets

Factor 2: Economic environment: global datasets

Factor 3: Social environment: global datasets

Factor 4: Technological and digital environment: global datasets

Factor 5: Legal environment: global datasets

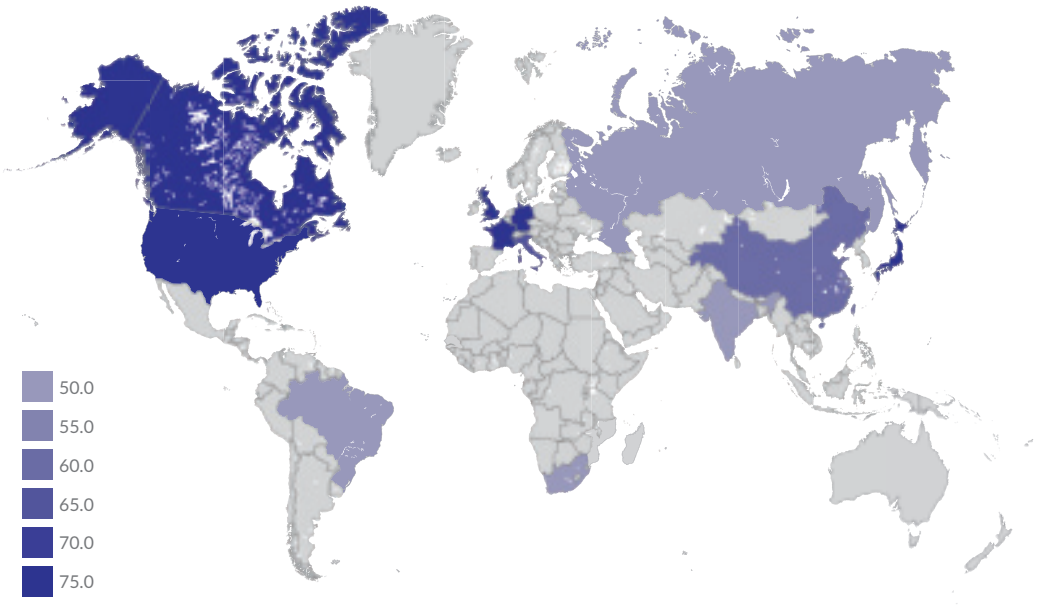
Factor 6: Media environment: global datasets and panel survey (of G7 and BRICS) data.

Media Sustainability Barometer Scores: G7 and BRICS

Germany scores highest on overall Media Sustainability:

G7 Country	MSB score
Germany	75.73
Canada	75.6
United States	73.81
United Kingdom	72.57
Japan	72.15
France	71.25
Italy	66.17

BRICS country	MSB score
South Africa	51.95
China	51.93
Brazil	51.68
India	46.59
Russian Federation	40.04

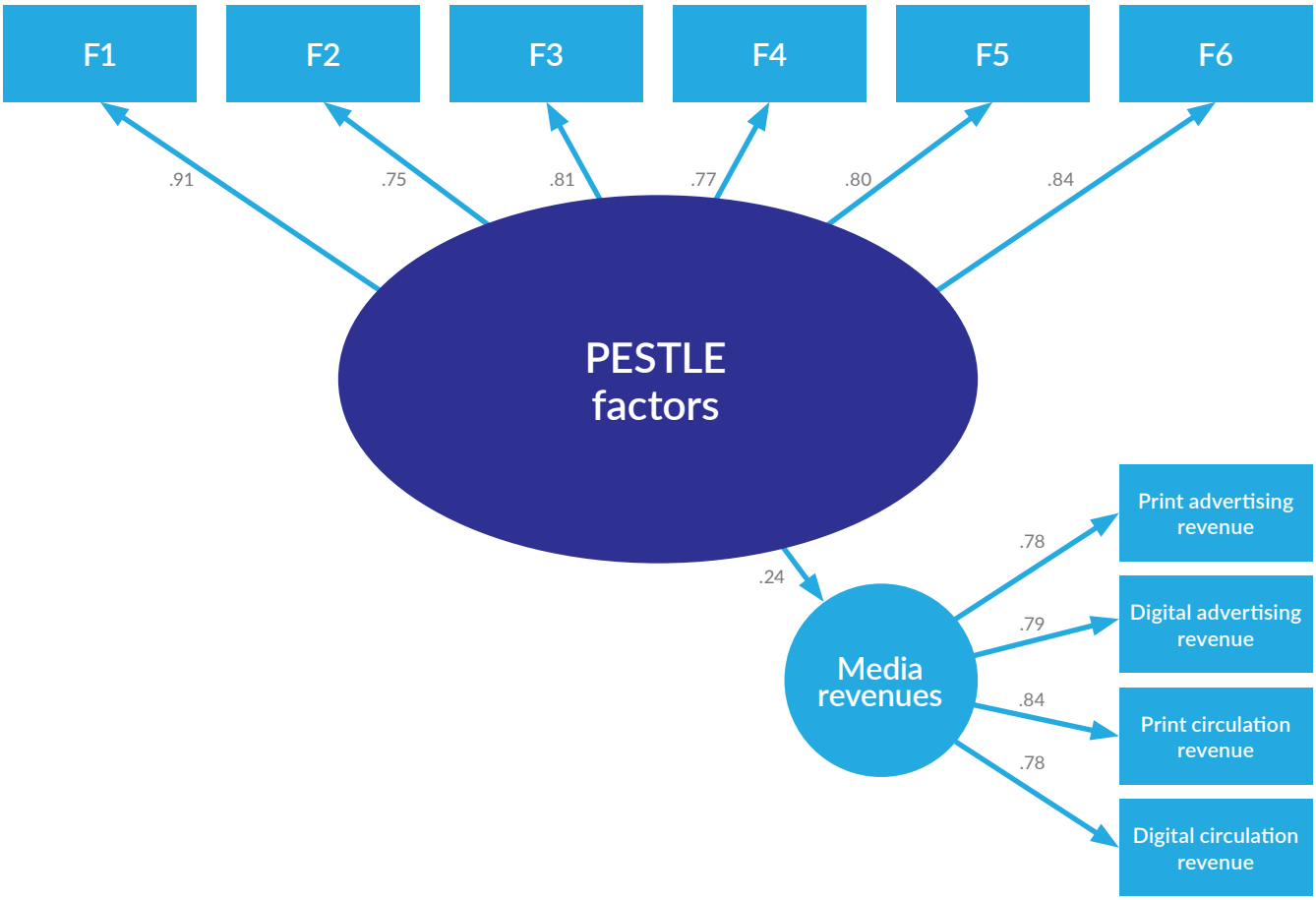


Media Revenues in the G7

The relationship between the PESTLE factors and media revenues (a key indicator of media sustainability according to UNESCO[7]) can be illustrated statistically in this simplified structural model which estimates that, for G7 countries, media revenues are significantly related to the six PESTLE factors:

Notes on the model: This model demonstrates that, for our current data, the PESTLE factors significantly predict media revenues (chi square (34) = 257.049; $p < .001$), with all indices being statistically significant. In other words, media revenues are significantly related to the six PESTLE factors.

FIGURE: simplified representation of a structural equation model, demonstrating the relationship between PESTLE factors and media revenues.

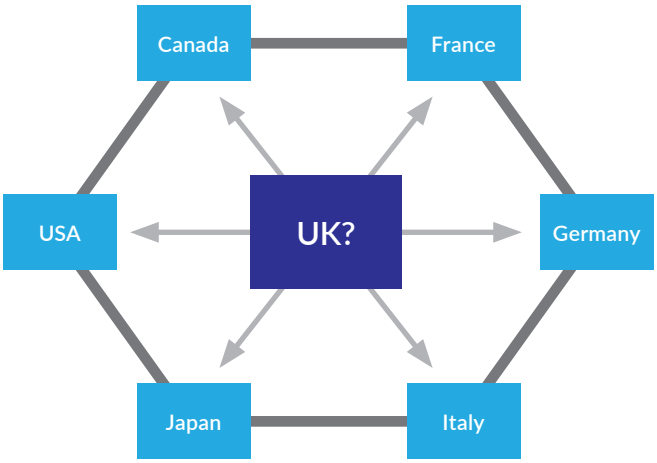


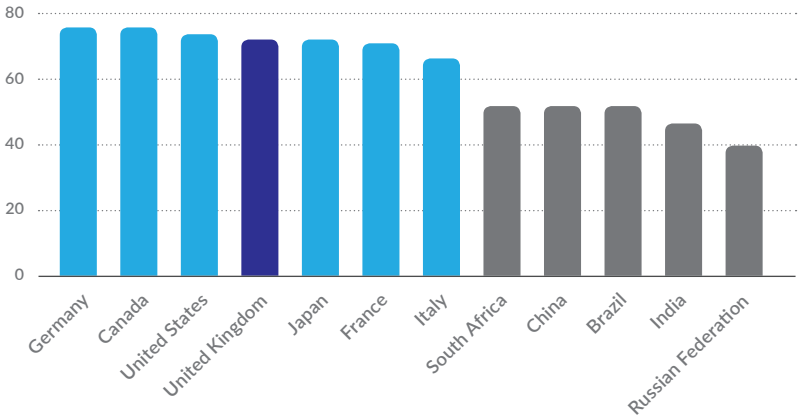
7 UNESCO: http://unesdoc.unesco.org/images/0016/001631/163102e.pdf

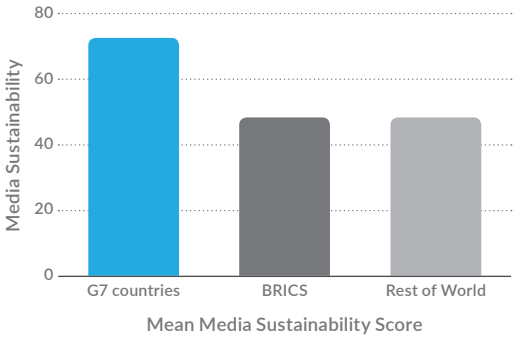
The UK in Context of the G7

Focusing on the position of the UK in relation to the G7 countries, the UK finds itself generally in the middle of the tables when examining each factor separately. It scores highest, in comparison with other G7 countries, on the technological and digital environment factor (internet and mobile penetration, innovation and digital transformation (digital revenues as a percentage of all news revenues)), while it scores lower on the economic environment factor (e.g., GDP; GDP growth; foreign investment; employment; public investment).

The UK is ranked 4th out of the G7 countries, above Japan, France and Italy. All G7 countries score higher than BRICS and the rest of the world. The difference between the G7 average (72.46) and that of BRICS (48.44) on the overall media sustainability score was statistically significant ($p < .001$):

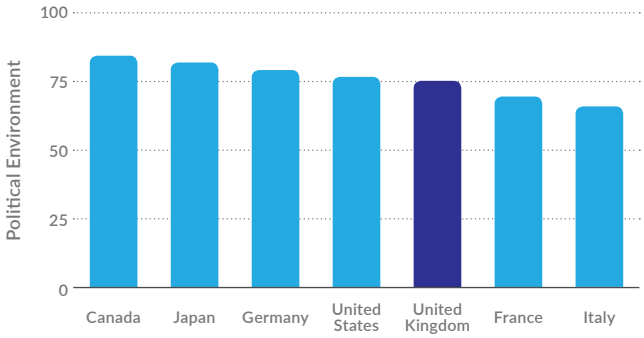






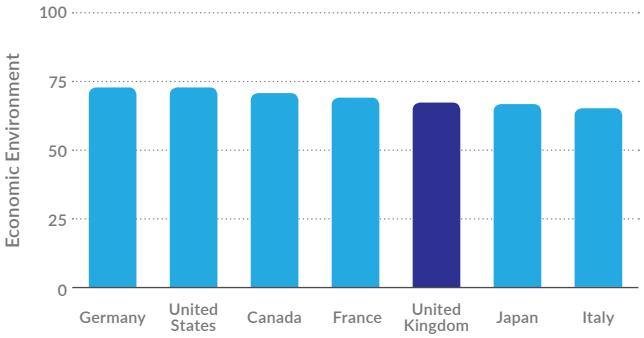
Factor 1: the political environment

The UK is ranked 5th out of the G7 in terms of its political environment (an aggregation of scores from the World Bank on control of corruption; political stability; strength of governance; voice and accountability and regulatory quality).



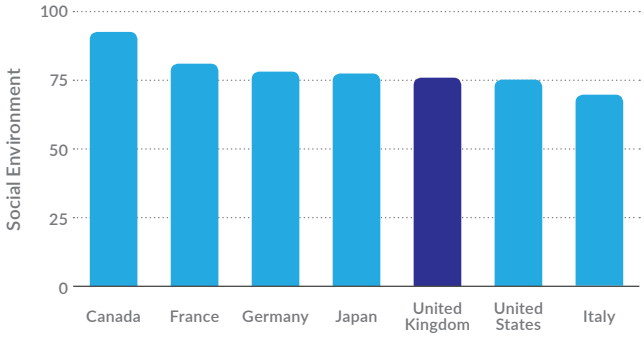
Factor 2: the economic environment

The UK is ranked 5th out of the G7 in terms of its economic environment (an aggregation of scores from the World Bank on GDP; GDP growth; foreign investment; employment and public investment).



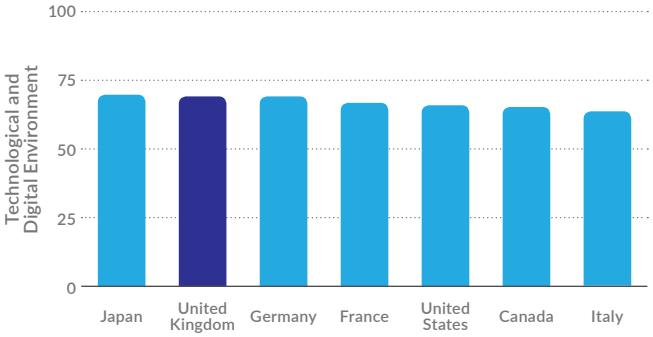
Factor 3: the social environment

The UK is ranked 5th out of the G7 in terms of its social environment (an aggregation of scores on gender equality (World Bank); inclusiveness (IPSOS); and a range of indicators taken from the United Nations Human Development Index.



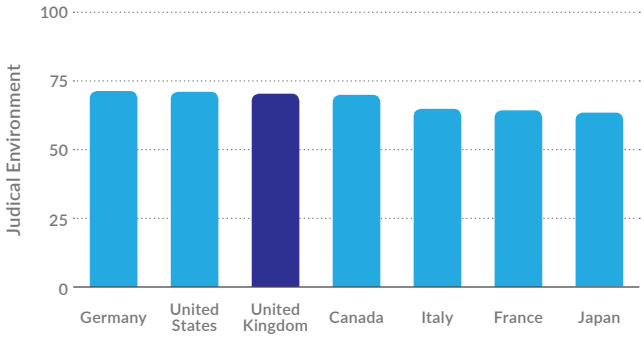
Factor 4: the technological and digital environment

The UK is ranked 2nd out of the G7 in terms of its technological and digital environment (an aggregation of scores from ITU on internet and mobile penetration, innovation (from the Global Innovation Index) and digital transformation (from PwC)).



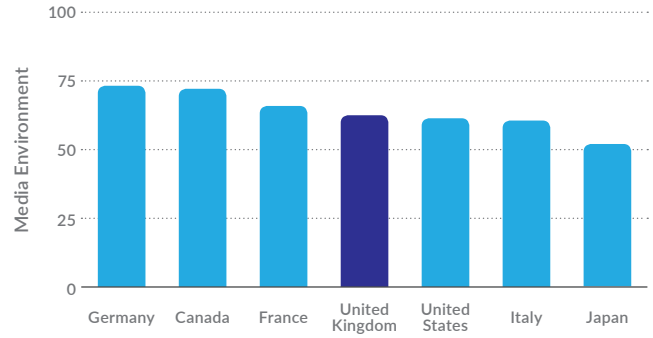
Factor 5: the legal environment

The UK is ranked 3rd out of the G7 in terms of its legal environment (an aggregation of scores from the World Justice Project on rule of law and peaceful societies; civil liberties (a Freedom House index) and quality of judicial processes (World Bank)).



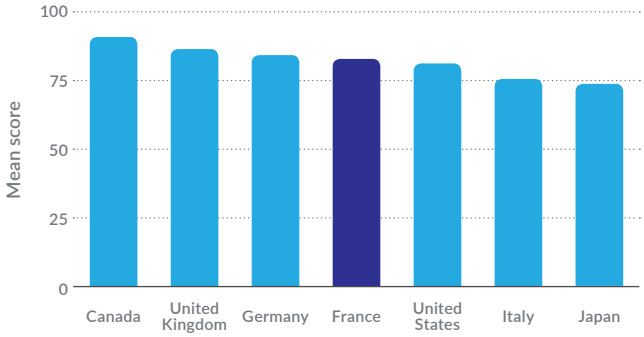
Factor 6: the media environment

The UK is ranked 4th out of the G7 in terms of its media environment (an aggregation of scores from Reporters without Borders on press freedom; trust (from the Edelman Trust Barometer); journalistic autonomy, plurality, influence and advocacy (from the World of Journalism); and from panel survey data covering media resources and organisational structures).



The United Nations Sustainable Development Goals and the G7

The United Nations Sustainable Development Goal 16 is to 'promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels'.

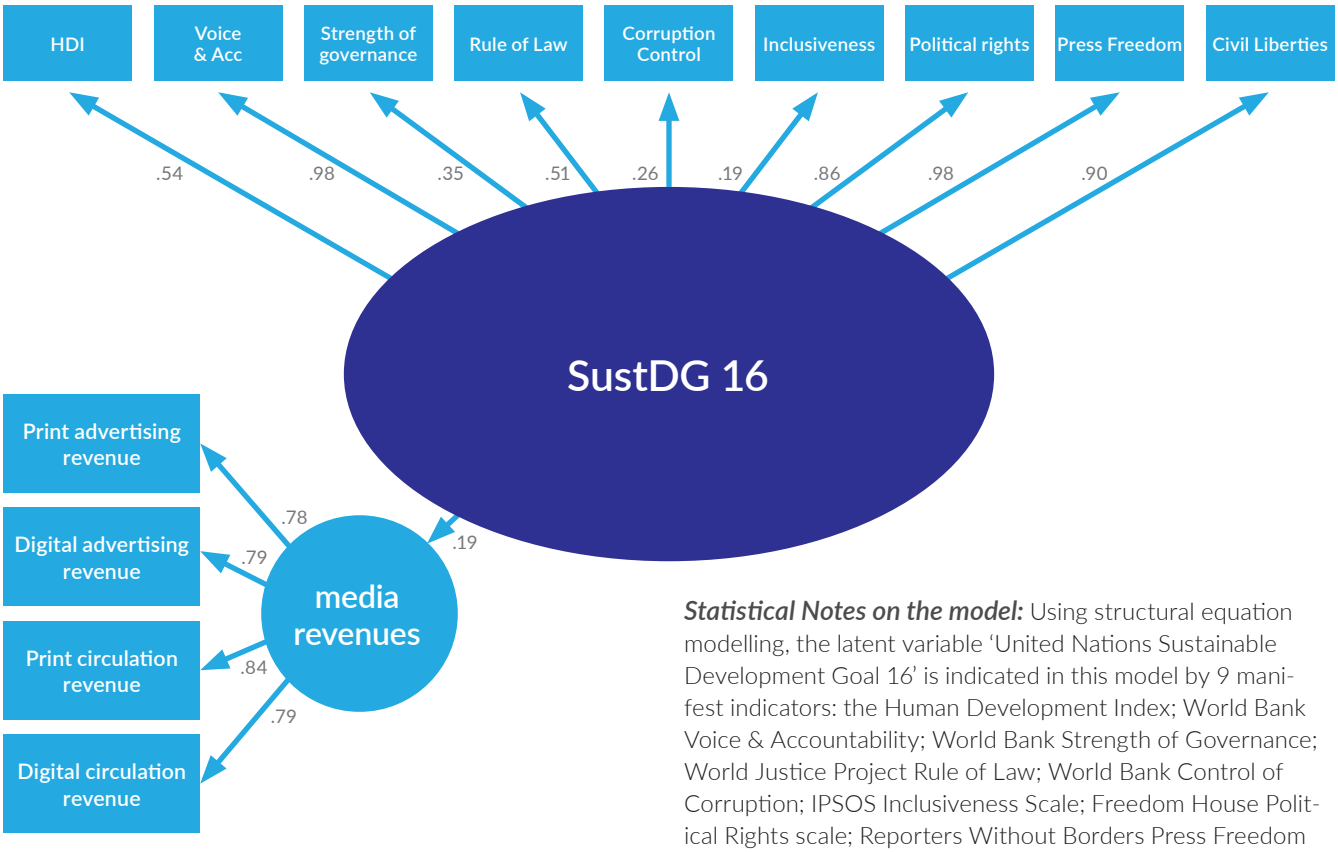


UN SDG 16 has particular relevance in the media ecosystem, since it appears (using pilot data) to be a statistically significant predictor of media revenues - that is, the greater a country scores on the aggregated SDG 16 variable, the greater its media revenues.

The SDG 16 variable, informed by the above definition, is created by aggregating a range of indicators, and includes the Human Development Index; World Bank voice and accountability; strength of governance; rule of law; corruption control; inclusiveness; political rights; press freedom and civil liberties. Taking Goal 16 as a whole, the United Kingdom stands 2nd in the G7.

The relationship between SDG 16 and media revenues can be exemplified in a structural equation model:

FIGURE: simplified representation of a structural equation model, demonstrating the relationship between SDG 16 and media revenues.



This model, constructed using structural equation modelling, demonstrates the relationship between United Nations Sustainable Development Goal 16 and media revenues, as indicated in our dataset. It reveals that on average, a country's SDG 16 score is a statistically significant predictor of its media revenues (which, according to UNESCO media viability indicators is a measure of media sustainability). The most significant aspects of the SDG, which influence media revenues are Voice and Accountability, Press Freedom and Civil Liberties.

Statistical Notes on the model: Using structural equation modelling, the latent variable 'United Nations Sustainable Development Goal 16' is indicated in this model by 9 manifest indicators: the Human Development Index; World Bank Voice & Accountability; World Bank Strength of Governance; World Justice Project Rule of Law; World Bank Control of Corruption; IPSOS Inclusiveness Scale; Freedom House Political Rights scale; Reporters Without Borders Press Freedom Scale and the Freedom House Civil Liberties Scale. This latent variable is regressed on (used as a predictor to estimate) media revenues, a latent variable which is indicated by print advertising revenues; digital advertising revenues; print circulation revenues and digital circulation revenues. This model uses a complete dataset, since panel survey data are not required in the model[8]:

8 Model output: Sample size = 264; Chi-square (64) = 322.390; p < .001; All regression weights p < .01; Model fit: TLI: .87; CFI: .89. R2 indicates that 4% of the variance in media revenues can be accounted for by a country's SDG 16 score.

Summary of Findings from the Pilot Study

01 **For the G7 as a group, the greatest influence on media sustainability is the political environment** (World Bank databases on control of corruption[9]; political stability[10] strength of governance[11]; voice and accountability[12]; regulatory quality[13]). In other words, the more stable the political situation in a country, the more sustainable the media. Of the components of this factor, the element which makes the most significant contribution to the factor is Regulatory Quality (loading of .84), followed by Voice and Accountability (.76), then political stability (.74), then Strength of Governance (.36) and Corruption Control (.34).

The second greatest influence on media sustainability is the media environment (press freedom, trust and innovation), **followed by the social environment** (gender equality; inclusiveness and the Human Development Index), and then the technological and digital environment.

This underlines the need for greater scrutiny of policies that impact on press freedom, trust and innovation, as well as those that shape gender equality and inclusiveness - as these directly impact on media sustainability.

This pilot reinforces findings from the World Press Trends 2018 report, which found that there is a very strong link between trust and the business bottom line. That study showed that there is a statistically significant positive relationship between trust and digital and print audience numbers, as well as income from digital and print advertising and circulation sales[14]. This highlights that a political and social milieu that undermines trust in the news media directly impacts on media sustainability.

That study also found that there is a significant relationship between the levels of press freedom and the financial performance of news media firms in 69 countries worldwide[15]. It was further noted that firms with entrepreneurial leaders who prioritised news revenue opportunities reported financial success across all markets - except in countries with low levels of press freedom. The risk to the sustainability of the news media industry posed by worldwide declines in press freedom from America to Ankara to Azerbaijan cannot - indeed must not - be underestimated.

These findings invite a variety of further questions:

- What should the priorities of the media development actors be, as they work to influence aspects of the political, social and technological environment, in order to achieve higher levels of media sustainability?
- Do the media contribute negatively to aspects of the political, social and technological environments?
- What are the inverse relationships - can increasing media sustainability improve political, social and technological stability?
- What is the state of media and communication policy in the UK and how does it compare with the policies in other nations and regions?

02 The UK ranges from 2nd to 5th in rankings of the G7, in terms of media sustainability scores across the PESTLE factors:

a. Political environment: 5th
b. Economic environment: 5th
c. Social environment: 5th
d. Technological and digital environment: 2nd
e. Legal environment: 3rd
f. Media environment: 4th

9 https://info.worldbank.org/governance/wgi/pdf/cc.pdf
10 https://datacatalog.worldbank.org/political-stability-and-absence-violenceterrorism-estimate
11 http://info.worldbank.org/governance/wgi/pdf/wgi.pdf
12 https://openknowledge.worldbank.org/handle/10986/3913
13 http://info.worldbank.org/governance/wgi/pdf/wgi.pdf
14 World Press Trends 2018 analysis showed the greater the trust (Edelman Trust Barometer 2018), the greater the: digital circulation figures ($r = .57$; $p < .001$); print circulation figures ($r = .59$; $p < .001$) print advertising revenues ($r = .50$; $p < .001$); print circulation revenues ($r = .44$; $p < .01$); digital advertising revenues ($r = .24$; $p < .05$); Data from PwC (Global Entertainment & Media Outlook 2018-2022) and Edelman Trust Barometer 2018; Analysis: Pearson's r correlation ($r > .5$ = strong correlation). Significance ($p < .001$ means a 1 in a 1000 probability that these results could have been achieved by chance).
15 Source: *$r = .21$; $p < .05$. ($r = .23$; $p < .05$) WPT analysis of primary data of a World New Publisher Outlook survey (10 languages; 246 media executives from 69 countries) and secondary data from the World Press Freedom Index. Statistical analysis (Pearson's r correlations), exploring relationships between indicators of press freedom, entrepreneurial leadership, entrepreneurial orientation and firm financial performance

Q.21: What are the greatest risks to the sustainability of the news media in your country?

Responses from UK media experts:

- being branded fake news by people in power who disagree with what you report
- declining interest in news from the general public
- a lack of awareness how journalism holds the powerful to account but that this costs money to do...
- loss of public attention to online alternatives
- social media platforms 'owning' much of the digital news distribution network
- a lack of working paymodels in the profession to fund journalism
- ineffective business model strategies that degrade the ability of journalists to do their jobs.

03 Overall, the UK ranks 4th in terms of media sustainability in the ranking of G7 countries. The G7 significantly outperforms the BRICS and the rest of the world.

04 The UK ranks 2nd (behind Canada) in terms of United Nations Sustainable Development Goal 16 to 'promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels'. Initial analysis suggests that a country's score on this goal is a significant predictor of its media revenues, a key measure of media sustainability. The most significant aspects of the SDG, which influence media revenues are Voice and Accountability, Press Freedom and Civil Liberties.

- Should media stakeholders be working on influencing the achievement of this UN SDG in order to increase media sustainability across the world?
- What does the UK's success in the pursuit of this SDG, and its potential as a predictor of media revenues, mean for policymakers considering the future of high-quality journalism here?
- Given that the future of high-quality journalism in the UK is considered to be in doubt - what does this mean for the rest of the world?

05 UK media experts identified a variety of threats to media sustainability that reinforce the data analysis In sum, the expert panel identified political and social forces as significant risks to the news media's position, capacity to play a key role in creating and shaping of public opinion, and its ability to strengthen society. These included being branded 'fake news'; lack of funding; social media platforms 'owning' much of the digital news distribution network; declining interest in news from the general public; a lack of awareness of how journalism holds the powerful to account; and that this costs money to do so.

06 G7 countries beyond the UK thought that media sustainability was threatened by: lack of fair pay to journalists; an unwillingness to pay for journalism online; a low advertising market; reduction of newspaper revenues; a decline of trust in media and journalism; a lack of diversity; lack of innovation; political stagnation; overwork; the movement of advertising revenues from news websites to Google and Facebook; budget cuts; a dearth of younger readers; underfunding of investigative journalism; equity and inclusion; the rise of social media and partisan information; and threats to press freedom.

07 Media experts from the BRICS countries agreed with those from the G7 countries in that they felt that the rise of 'fake news' and lack of trust were key issues that affected media sustainability. However, there was also an emphasis on the problems caused by strict governmental control, 'pressures' from official authorities and the rise of anti-media rhetoric coming from high ranks of government, resulting in journalists becoming targets of anger, rather than sources of information.

The Future for the Media Sustainability Barometer

The proposed full dataset of MSB indicators will include:

a) An aggregation of a range of global datasets, including elements of the six PESTLE factors as we have specified them (political, economic, social, technological and digital, legal, and the media environment).

b) Panel survey data from media experts who can provide locally available information on aspects of the media environment that are not available through global datasets (e.g., local media resources and national structures).

Proposed modelling methodology:

The proposed analytical methods to be employed in the full MSB include:

a) Descriptive charts (e.g., histograms and pie charts)

b) Group comparisons (e.g., t-tests and Analysis of Variance (ANOVA))

c) Exploration of relationships using correlation analysis

d) Regression analysis, which allows for an estimation of the extent to which one factor predicts another

e) Structural equation modelling (SEM), which allows modelling of complex relationships across the media ecosystem (e.g., relationships between media revenues and aspects of the 'fake news' phenomenon, such as press freedom, editorial autonomy, independent media, trust etc).

The researchers foresee inviting, in the first instance, the expert panelists to unpick the significance of the data findings for their countries or region, and to help formulate recommendations for actions for further discussion amongst GFMD's 190 partners, including UNESCO. We expect that report to spur wider discussions amongst industry bodies and other role players.

Disseminating the MSB data and insights will, we expect, be through four principal avenues:

- **GFMD:** An annual summary report in collaboration with GFMD and distributed through their member organisations in 70 countries.
- **Web-based user interactive database application.** To enable individual users to drill-down and extract insights and drag-and-drop reports from the MSB database, which we would seek to update in real time.
- **Industry Bodies:** Presentations, workshops and mailings in collaboration with other media industry associations, e.g. WAN-IFRA, the World Association of Newspapers and News Publishers, the Digital Editors Network (UK), etc.
- **Researcher groups:** The researchers also hope to set up an annual research colloquium, a programme for visiting researchers and PhD studentships to enable the deeper interrogation of the data.

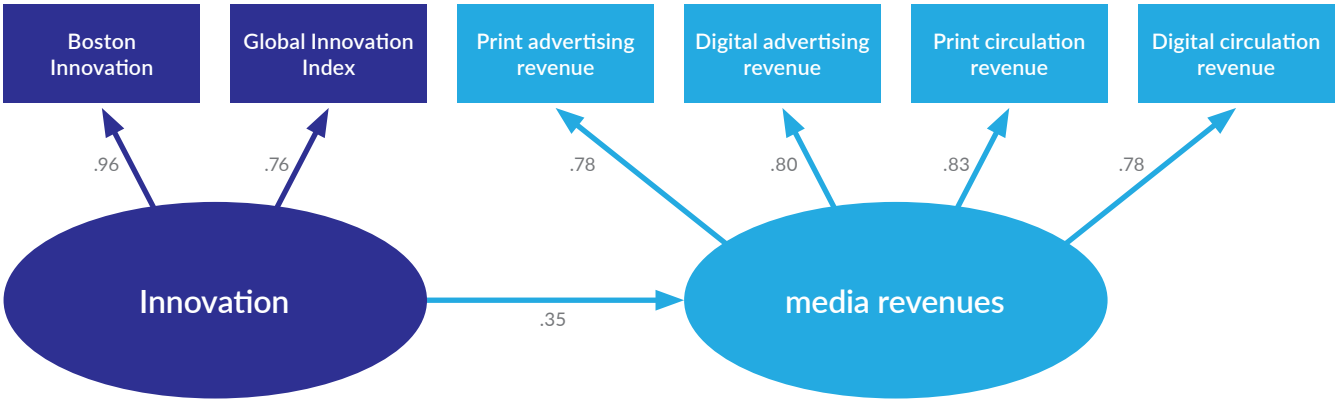
How the Media Sustainability Barometer is Operationalised - Modelling Ecosystems

The following is an example of how the MSB data can be used to model the media sustainability ecosystem. The model estimates that 'innovation', as indicated by data provided by the Boston Innovation Group and the Global Innovation Index, significantly predicts 'media revenues' as indicated by PwC data on print and digital circulation, and advertising revenues. In other words, the greater a country's innovation score, the greater the media revenues, on average.

Notes on the model: Using structural equation modelling, a latent variable 'Innovation' is constructed by using two innovation measures (one from the Boston Innovation Group and the other from the Global Innovation Index) as its manifest indicators. Similarly, a second latent variable 'Media Revenues' is constructed, using print advertising revenues, digital advertising revenues, print circulation revenues and digital circulation revenues (from PwC data) as its manifest indicators. Then 'Innovation' is regressed on 'Media Revenues'. This model uses complete data, since panel survey data are not included in the model.

Analysis: Innovation is a significant predictor of media revenues, with a regression weight of .35; p < .001. Chi square (8) = 65.274; p < .001. All standardised regression weights are statistically significant and greater than .76. It is estimated that 12% of the variance in media revenues can be accounted for by a country's Innovation score. The model fit of TLI = .87; CFI = .93 suggests that this model fits the data very well.

FIGURE: simplified representation of a structural equation model, demonstrating the relationship between Innovation and media revenues.



Conclusion & Recommendations

The aim of the pilot is to establish a methodology for creating an ongoing media sustainability barometer (MSB) that is capable of mapping, and in particular modelling, the media sustainability ecosystem.

It addresses the need, as identified for instance by the call for evidence to the Cairncross Review, to understand the factors that influence media sustainability, with a view to influencing evidence-based policy decision-making in the future.

Using a standard business evaluation framework based upon PESTLE, it has established relationships across a range of underlying influences on media sustainability (the political, economic, social, technological and digital, legal, and media environmental influences).

The MSB has been tested on G7 and BRICS data and has demonstrated a number of models that estimate the potential for extensive modelling of the media ecosystem.

Those who care about the sustainability of the news media - industry professionals as well as policymakers, government and other media development actors - are confronted with a significant challenge: understanding the complex forces that influence the wellbeing of the industry. The Media Sustainability Barometer is a tool to help them do just that - and more.

In the first instance, it clearly conceptualises the ecosystem and draws on recognised data indicators in order to measure and monitor different elements. But, perhaps more importantly, it provides a means to model and predict how the constituent factors of media sustainability interact with each other in any one country or region.

Modelling the data for the G7, for instance, reveals that the greatest influence on media sustainability is the political environment (e.g., control of corruption; political stability; strength of governance; voice and accountability; regulatory quality), followed by the social environment (e.g., gender equality; inclusiveness; Human Development Index, comprising education; per capita income; life expectancy). In other words, in G7 countries, for the media to thrive, the political and social environments need to thrive. In this pilot data we also note that the UK ranks fifth in both political and social environment scores, suggesting that they lag behind in the two most important factors influencing media sustainability - which invites actors in these areas to further deliberate the implications and devise specific further actions. Having knowledge at this level of granularity is a powerful tool for policymakers and media professionals.

At this time of political, economic, social and technological upheaval, understanding the media landscape through objective analysis is crucially important to those who would attempt to create sustainable business models. This is the case for policymakers, as well as for those media professionals and other development actors on the ground.

In the Media Sustainability Barometer, we offer a powerful tool that is operational as a means of analysing the complexity of media sustainability. Having the capacity to measure and predict those factors that influence the media industry will not only enhance understanding of the ecosystem, but will aid strategic actions.

Wider recommendations

This pilot study shows that media and communications policies are central to many of the social and political issues societies face today. In doing so, it invites questions about whether policies pursued in the past are fit to respond to rapid changes and complexities of contemporary social and digital contexts. It suggests the need for a companion benchmarking study to understand and evaluate the current state of media policy within and across countries and regions, in order to identify best practice and to shed light on areas and means of performance improvement.

About the authors

Dr François Nel is Reader in Media Innovation and Entrepreneurship at the Media Innovation Studio of the University of Central Lancashire, UK. He gained his doctorate from City University London, where his research explored the decision-making of journalistic innovators in the newsroom, boardroom and classroom. He specialises in media innovation and leadership development. He is a founder and convenor of the Digital Editors Network (UK), a Fellow of the European Entrepreneurship Educators Programme (3EP) and a 2013 National Teaching Fellow of the UK Higher Education Academy. François is the first academic to become an executive member of the World Editors Forum and has worked to support entrepreneurial individuals and forward-thinking organisations worldwide, including News UK, Trinity Mirror, Johnston Press, CN Group, Times Media Ltd (South Africa), and the World Editors Forum. François is editor of the annual World Press Trends report for WAN-IFRA, the World Association of Newspapers and News Publishers.

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Dr Coral Milburn-Curtis gained her doctorate from the University of Oxford, where her empirical research explored the effects of dialogic argumentation on the critical thinking of young adolescents. Her specialism is quantitative research methods, with an emphasis on structural equation modelling. She an Associate Fellow of Green Templeton College, University of Oxford, where she teaches statistical methods to graduate students; Professor and Director of Studies at IPE Business School, Paris, and Associate Staff at the University of Central Lancashire, Preston. Coral is chief data analyst for the annual World Press Trends report for WAN-IFRA, the World Association of Newspapers and News Publishers.

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Milburn-Curtis, Coral and Nel, François. (2018). Measuring Media Sustainability: Towards a Global Barometer. The Innovation Research Group, Oxford and Manchester, December 2018.

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