

## **Why aren't they listening to us? Exploring Marketing literature's (lack of) presence in the most influential summary of Climate Change Science.**

The Intergovernmental Panel on Climate Change 6th Assessment report is the summary of science relied upon by the UN and national governments to understand the causes, impacts and solutions to climate change. The report from Working Group three examines how to mitigate climate change and explicitly addresses consumer behaviour and (over)consumption. Despite its importance, and examination of many topics of interest to marketing scholars, only 0.2% of the report's citations are from marketing journals. Using content analysis and keyword searches on three literatures, this paper presents initial explanations for this finding. The analysis highlights a mismatch between the data present (emissions and environmental impacts) and research type (applied with sectoral focus) in the report, and that in marketing sustainability special issues and marketing scholarship. It contributes by highlighting how marketing scholarship can potentially improve its impact and hence the quality of the report.

*Keywords: Sustainability, IPCC, Life Cycle Assessment*

*Track: Social Responsibility Ethics*

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## **1. Introduction and Problem Development**

As greenhouse gas emissions due to human activity continue to rise globally (Crippa et al., 2019), there is evidence that we have already crossed numerous 'planetary boundaries' (Steffen et al., 2015) representing the safe space for human development. Of even greater concern is that vital climate systems such as the Greenland ice sheet and tropical coral reefs may have already reached tipping points where changes become unstoppable and self-perpetuating with serious implications for humanity (Lenton et al., 2019).

This summary is drawn from research cited in the Intergovernmental Panel on Climate Change (IPCC) 6<sup>th</sup> Assessment report. This report is the latest in a series of scientific summaries relied upon by the United Nations and the international community for its understanding of the problem, causes and perhaps most importantly, solutions to the climate emergency. These reports provide the scientific foundations upon which international agreements, such as the Paris Accord (2015) are negotiated at the biennial climate Conference of the Parties (COPS). It is the Paris agreement, signed by 194 countries, that pledged to limit global warming to below 2 degrees centigrade,

As part of the 6<sup>th</sup> Assessment report, Working Group three examines how to mitigate climate change. Mitigation refers to efforts to prevent or reduce greenhouse gas emissions and as well as technical solutions, explicitly seeks to address consumer behaviour. This group's 2913-page report contains chapters addressing demand side aspects of mitigation and implementation conditions and mentions 'consumption' 1198 times, 'consumer(s)' 646 times and 'behaviours' and 'behaviour change' 780 times. Despite these foci, only 19 of the 9280 journal articles cited in the report were drawn from Marketing journals identified as such in the Association of Business School (ABS) rankings. Should this lack of presence be a cause for concern to Marketing and Consumer research scholars and if so, what is behind it?

There is now a significant volume of marketing and consumer research literature specifically focussing on climate change and sustainability. In addition, the broader marketing literature has much to say on our understanding of how to mitigate climate change. Marketing and Consumer research, using a range of epistemologies helps us, for example, understand consumption and consumers as they acquire, use and dispose of goods, the nature of markets, how to develop persuasive advertising and communications, well as insights into strategy and campaign development and measurement. Indeed, considering the active research communities exploring Anti-consumption, Responsible Consumption, and Transformative Consumer Research, this lack of presence warrants greater examination.

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The paper seeks therefore to explore potential reasons why marketing-based literature represents only .2% of journal citations in the IPCC 6<sup>th</sup> assessment report working group three summary, despite its focus and purpose to précis the most influential and insightful science relating to climate change mitigation. There are a number of potential explanations. Including the focus and quality of marketing-based literature, the reputation of the discipline as well as issues relating to the process and methodology used by the IPCC working groups. It is the former that this paper will broadly examine. It seeks to contribute by highlighting how marketing scholarship can potentially improve its impact within this important report and hence improve the quality of the science included.

The paper first sets out the process by which the 6<sup>th</sup> Assessment report is produced before examining its marketing and consumer research related topics, themes, and citations. Based on findings from this section, it then examines the content, forms of measurement and themes present in sustainability special issues published in marketing journals to explore where any disconnects between this work and the implicit requirements to be cited in the assessment report. The third section will set out the lack of environmental impact measurement in marketing and marketing sustainability focussed literature generally. The Discussion and Recommendations sections set out ways to improve marketing's impact in the work of the IPCC and in doing so potentially improve the quality assessment reports themselves.

### *1.1. The IPCC Assessment reports*

The IPCC is the UN body formed to assess and report on the scientific, technological and socio-economic information related to climate change. It aims to provide a scientific summary for policy makers and whilst mandated to inform policy questions it must do so from a neutral stance. The six assessments conducted to date, are performed to a specified timescale, and must include scholarly research from a wide range of disciplines (IPCC, 2022b).

The 6<sup>th</sup> assessment cycle covers a seven-year period from 2015 and publishes a range of reports including from three working groups. The first of these focusses on the 'Physical Science Basis' of climate change, the second addresses 'Impacts, Adaptation and Vulnerability' and the third 'Mitigation of Climate Change' (IPCC, 2022a). This groups report contains chapters examining mitigation of specific sectors corresponding to the main sources of emissions such as Transport, Buildings, Agriculture and Food and Industry. There are also chapters examining the demand side aspects of mitigation and a section on the implementation and enabling conditions which includes social aspects of mitigation. The work of this group is therefore of most relevance to marketing and consumer researchers. The report was written by a core author team

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of 278 academics and content specialists supported by reviewers who suitability is assessed by the core team. The first draft review received 21,703 comments, the second, 32,555 and the final draft 4,954. During the process over 18,000 citations were suggested with 9280 journal citations present in the final report.

**2. Methodology**

To provide an overall understanding of the citations in this report, a three-stage methodology was used. First, to further understand the relevance of this report to marketing and consumer researchers, a keyword search was conducted on related terms (for example Marketing, Consumer, Consumption, see Table 1). This highlights the topics discussed and their frequency. Second, to establish which journals appeared in the report and their frequency, a second keyword search based on abbreviated titles as used in the bibliography (*J. Consum. Res.*, *J. Mark.*) was performed. Finally, the content of work used to support the terms identified in stage one was reviewed qualitatively to identify themes explaining their inclusion.

**3. Findings**

*3.1. IPCC Report Analysis*

Table 1 sets out the occurrences of marketing related keyword in the report. In addition, the report examined price and influence of price, supply chain management, food and marketing regulations, dietary guidelines, food labels and guidelines, social movements, multiple roles (Producers, Sellers, Consumers) consuming less and consumer empowerment and consumer behaviour campaigns. It is evident therefore that there is significant overlap between the concerns of marketing and consumer research scholars generally as well as those focused on marketing sustainability and the topics assessed in this report.

Table 1

<b>Keyword</b>	<b>Occurrences</b>	<b>Keyword</b>	<b>Occurrences</b>
Consumption	1198	Lifestyles	82
Services	776	Behaviour change	56
Behaviours	724	Marketing	33
Consumer (s)	646	Social practices	23
Intervention(s)	632	Advert	17
Consume	93	Brand	7

The results of the journal title keyword search relating to Marketing and Consumer Research journals is provided in table 2. Overall, 19 references were attributable to Marketing journals as

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categorised in the ABS rankings. Ten of these appeared in two of the 17 chapters (5 and 6). These represent part of a long tail of the distribution when compared to those featuring most regularly, for example Nature and its subtitles (i.e., Nature Communications) account for 1053 citations, Energy Policy n= 509, Environmental Research letters n=409 the Journal of Cleaner production n= 318, Applied Energy n=205, Energy Economics 153.

Table 2

<b>Journal</b>	<b>Count</b>	<b>Year</b>	<b>ABS rank</b>
Journal of Consumer Research	2	1989, 2012	4*
Marketing Science	2	2004, 2012,	4*
Marketing Letters	2	2012, 2016	3
Journal of Marketing Management	2	2012, 2012	2
International Journal of Consumer studies	2	2017	1
Journal of Marketing	1	1990	4*
Journal of Marketing Research	1	2009	4*
Journal of Consumer Psychology	1	2007	4
Journal of the Academic of Marketing Science	1	2019	4
International Journal of Research in Marketing	1	2010	4
Industrial Marketing Management	1	2016	3
Psychology & Marketing	1	1994	3
Journal of Consumer Behaviour	1	2015	2
Consumption, Markets and Culture	1	2014	2

Table two highlights that whilst top tier marketing journals are represented, the median date of publication overall is 2012 and only five were published during the assessment cycle period (2015 to 2022). In addition to the small number of citations when compared to the overall total and age of the contributions, none of the articles were published in marketing journal special issues focussed on Sustainability. Further, only two authors, Vijay Mahan and Michael Polonsky appear twice, also highlighting that no authoring team is represented.

### *3.1.1. Citations themes: Measurement and Context*

The analysis of the citations supporting marketing and consumer research related terms highlighted two main themes around how evidence for impact is provided and the importance of context. To illustrate these within the space provided and considering the concentration of the marketing references in chapters 5 or 6, the examples below are taken from these parts.

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A frequent feature of the research in the highly cited journals in this chapter (Journal of Cleaner Production, n=35, Environmental Research Letters, n= 33 and Journal of Industrial Ecology, n=21) is their use of Life Cycle Assessment (LCA) and other carbon measurement techniques (Lenzen, 2002). Hence in discussing the mitigation potential of specific technologies such as electric vehicles (Dhar, Pathak, & Shukla, 2017), behaviours such as reducing flying (Ivanova et al., 2016) or changing diet (Garvey, Norman, Owen, & Barrett, 2021) estimates are made as to the greenhouse gas emissions reductions possible by the proposed solutions. This reliance on measurement is seen where socio economic issues such as the wellbeing economy (Fanning & O'Neill, 2019) or the influence of poverty (Uzar & Eyuboglu, 2019) are discussed,

The second clear theme is that research used to set out the mitigation potential of a main emissions sectors, and the solutions by which this can be achieved tends to rely on research performed *within* that context rather than work which focuses on the mitigation solution, underlying concept, theory or target group. For example, the work exploring mitigation tends to come from context specific journals (i.e. Applied Energy or Energy Policy) that examine mitigation issues such as downsizing as an anti-consumption activity (Huebner & Shipworth, 2017), market access (Pan, Teng, Ha, & Wang, 2014), communications campaigns (Delmas, Fischlein, & Asensio, 2013), behaviour change (Duarte, Feng, Hubacek, Sánchez-Chóliz, & Sarasa, 2016) rather than citing articles whose primary focus is understanding these issues. For inclusion in report, the sector and context appears to be more important than providing the setting in which to examine or explore novel or innovate conceptual or methodological findings. Whilst ensuring the report contains highly specific work, it does mean that insightful research into cross cutting themes, or solutions, for example anti consumption, alternative forms of markets, or communications may be missed.

To explore if the low prevalence of Marketing and consumer research may be due to a disconnect between these two themes, the next section sets out a content analysis of research published in special issues of Marketing journals examining sustainability. The final section explores this more widely in Marketing literature.

### 3.2. *Analysis of Sustainability focused Marketing special issues*

The first stage of the content analysis was to establish a list of sustainability related special issues published in Marketing journals. A keyword search was performed (sustainability, sustainable, climate change) on titles appearing in the ABS ranking list. Fifteen special issues were identified between 2011 and 2021 (cut-off date March 2021). The articles published were then read and coded according to type of article, methodology, context and themes.

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Reviewing all the sustainability related marketing and consumer research articles or related special issues (for example CSR, Responsible Marketing, Anti-Consumption) sat outside what was possible within the aim of this initial exploratory research.

The key findings were that 89% of the articles were empirical with remainder literature reviews or editorials. The methods used were qualitative (61%), followed by mixed methods (34%) and quantitative only (5%). The mixed methods approach combined interviews and surveys with linear regression analysis or hypothesis testing. The main themes were consumption (30.4%), sustainable marketing practices (25%) and social responsivity (14.3%). Two articles examined sustainable cities, two examined food, one focussed on energy. No articles used LCA or other foot printing tool, instead they reported using qualitative findings or where quantitative data was collected, the effects of interventions on latent psychological or observed variables. For example, Martín-Peña et al. (2019) explored the impact of servitisation and digitalisation on firm performance. Servitisation, the dependent variable, was measured by the proportion of an organisation's sales for which services account, digitisation, a moderating variable, was measured by multi-item scale and firm performance was measure via total sales.

### *3.3. Analysis of use of LCA in marketing literature*

To explore this finding regarding the use of LCA and other well established environmental impact tools a final search was conducted a census of research in marketing examining sustainability (and related topic). Using the search terms ("marketing") AND ("consumer" OR "green" OR "eco" OR "sustainability") AND ("input-output analysis" OR "life cycle assessment" OR "life cycle analysis") in the EBSCO and ABI inform databases, the resultant hits (26 and 91 respectively) were examined to see how and where these methods had been used in Marketing journals. All of the hits where an LCA or Input Output analysis (Minx et al., 2009) was performed appeared in journals (such as the Journal of Cleaner Production or the Journal of Industrial Ecology) outside the field of Marketing as defined in the ABS listings. Three instances were found in marketing journals where the LCA referred to in the keywords and abstracts was an environmental assessment method (rather than unrelated ideas such as the Product Life cycle). All discussed the benefits of the method and its importance though none carried this through to an application (See Bascoul, Schmitt, Rasolofoarison, Chamberlain, & Lee, 2013; Patala et al., 2016; Tadjewski & Wagner-Tsukamoto, 2006).

## **4. Discussion and Recommendations**

This paper provides an initial examination of citations in the IPCC 6<sup>th</sup> Assessment report, working group 3's report on the Mitigation of Climate change. The analysis shows significant

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overlap between the topics this report is charged with summarising and those of interest to marketing and consumer research. This research sets out two main reasons why despite overlap so few of our articles appear in a summary of science addressing one of, if not the most important crises, facing humanity and the other inhabitants of this planet.

In providing evidence upon which mitigation efforts should form the basis of policy choices, the IPCC report attempts to quantify the impact possible in each of the main emissions categories. Overall, the approach is quite simple. Having calculated the overall amount of GHG that can be released into the atmosphere and still avoid 2 degrees of warming, and understanding the current rate of emissions, the mitigation options are assessed according to how much of this total they account for and at what cost and likelihood of success. Without adopting well established methods for modelling the GHG reduction (Lenzen, 2002) and presenting data on what can be expected by an intervention, marketing literature is not providing the measurements required by the IPCC and policy makers.

The second issue identified is that the . Hence research in sector based (i.e., Energy, Transport) and sustainable development journals which addresses questions about the main emissions sectors dominate. This does run the risk that excellent and insightful work in other contexts can be missed. There are institutional barriers in marketing scholarship making it difficult to focus on applied research as top tier journals explicitly require conceptual innovation and cutting-edge research (i.e., Journal of Consumer Research, European Journal of Marketing) as well as research quality measures (i.e. the UK's Research Excellence Framework) and promotion criteria insisting on novel, conceptual research. Beyond concerns internal to marketers and marketing, if the quality of its scholarship and insight into these issues is to be trusted then, then the lack of first order presence may also reduce the quality of these reports. In turn it can be argued that action at the scale, scope and speed required is subsequently slowed.

The clearest recommendations are to routinely adopt LCA methodologies in order to highlight the impact, in terms of carbon dioxide or methane emissions saved by a particular intervention. These methodologies are well known, and software and training courses are readily available (Simapro, 2022). Discussions on how to improve marketing's impact whilst maintaining methodological and conceptual rigour whilst broadening impact are echoed here (Jaakkola & Vargo, 2021). An initial step can be stipulated that the scope of discussion sections should consider the contributions made to the Sustainable Development Goals.

There is a need for special issues, collections and conferences directly addressing climate change mitigation and adaptation, so setting out what marketing has to contribute to the goals of the IPCC reports. Inviting guest editors from sustainable development and sectoral journals to

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help shape these contributions would be an interesting way of collaborating. Finally, marketing scholars can engage directly with the IPCC as part of the core writing team or as reviewers if agreement could be found as to the work most important to include this would increase its chances of inclusion. This work represents an initial analysis of the citations and the themes presented in the IPCC working group three report. More detailed examination of the 2<sup>nd</sup> and 3<sup>rd</sup> order references (who do the authors cited, cite?) would provide greater insight into marketing scholarships impact on the applied research used. A similar analysis over the five earlier mitigation reports would illuminate trends.

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