THE (ALMOST) IMPERCEPTIBLE IMPACT OF TOURISM RESEARCH ON POLICY AND PRACTICE

INTRODUCTION

The recent torrent of concern about the potentially distorting effects of impact factors and journal rankings on academic enquiry (Gursoy and Sandstrom, 2014; Hall and Page, 2015; Poria, Schwartz and Uysal, 2015; Tourish and Willmott, 2015) has been matched by only a steady stream of interest in the extent to which academic research in tourism and related fields informs policy or practice (see, for example, Airey, Tribe, Benckendorff and Xiao, 2015; Melissen and Koens, 2015; Hoarau and Kline, 2014; Jenkins, 1999; Pyo, 2011; Ritchie and Ritchie, 2002; Ryan, 2001; Xiao and Smith, 2007; 2008). Yet, an increasingly technocratic approach to the measurement of academic performance via such metrics is also contributing to research policies that require social scientists to justify their endeavours by reference to the usefulness of their research to various 'stakeholders' (Academy of Social Sciences, 2011; Bastow, Dunleavy and Tinkler, 2014; Tourish, 2011).

Over recent years, research policy in many countries has encompassed a concern to demonstrate the value of publicly funded research, increasingly via reference to its relevance for non-academic audiences (See, for example, Bramwell, Higham, Lane and Miller, 2016; Coles, 2009; Geuna and Piolatto, 2016; Glover, 2015; Hill and Kumar, 2009; Tartari, Salter and D'Este, 2012). Indeed, as Banal-Estanol, Jofre-Bonet and Lawson (2015: 1160) recently noted 'nowadays, increasing university-industry collaboration is a primary policy aim in most developed economies'. Thus, in addition to evaluating the 'significance, quality and rigour' of university research in the UK, the geographical focus of this study, its impact, or consequence, is increasingly assessed as part of official evaluations of institutional research performance (emphasis added www.ref.ac.uk/). Similar forms of assessment undertaken elsewhere, such as in Australia (www.arc.gov.au/excellence-research-australia), Canada (Albert and McGuire, 2014) or New Zealand (www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/performance-based-research-fund/) are inflected with similar concerns.

In this environment, it is perhaps not surprising that publishers are becoming more alert to promoting the non-academic impact of their publications. Some, for example, are creating opportunities to 'share' work by including various social media icons conveniently on their web pages next to the articles being read. A growing number of tourism journals are also already using or considering adopting the altmetric system for measuring 'attention' (http://www.altmetric.com/publishers.php). 'Attention' in this instance is judged to be an amalgamation of 'volume' (the number of people who mention the piece of work), its 'source' (newspaper articles, tweets and blogs make differential contributions to the score) and the authors' efforts (sharing links with some audiences contribute more to the score than sharing with others).

Following a review of the literature on university-practitioner relations, notably in relation to the use of academic research for non-academic purposes, this paper examines the impact of researchers working in the UK on tourism policy and practice. It does so using three main forms of data; those contained in the recent official assessment of research quality and impact in the UK (the Research Excellence Framework or REF), the digital footprint (Halfpenny and Procter, 2015) of the UK's leading tourism scholars, and qualitative interview data garnered from a selection of academic researchers. Although confined empirically to the UK, the study can be read in the context of contentious global debates regarding the socio-economic role of university research generally (Docherty, 2016; Yudkevich, Altbach and Rumbley, 2016) and tourism research in particular.

PERSPECTIVES ON IMPACT

An official emphasis on engagement with non-academic audiences is welcomed by many scholars (e.g. Bennis and O'Toole; 2005; Cooper, 2015). For them, it merely reflects what is often seen as an uncontroversial normative-analytical aspiration to strengthen the relevance of research to practitioners in tourism. The challenge in these circumstances becomes not whether academic research should inform policy and practice but how this might best be achieved (e.g. Hewitt-Dundas, 2013; Jones, 2014). From this perspective, explanations for the limited impact of tourism research reported by most commentators

tend to relate to failures of communication and social engagement via networks (Frechtling, 2004; Ritchie and Ritchie, 2002; Ryan 2001; Scott and Ding, 2008; Scott and Flores, 2015; Jenkins, 1999; Xiao and Smith, 2010), a lack of motivation among practitioners (Cooper, 2006; 2015a; Tho and Trang, 2015), the low number of transformational learners who are open to ideas explored by academics (Thomas, 2012), policy (and practice) 'distance' and weak mobilization of knowledge (Glover, 2015; Ruhanen, 2008), an insufficient number of knowledge brokers (Hawkins, Elliot and Yu, 2012), and the existence of a number of other barriers that academics struggle to overcome (for a review see Xiao and Smith, 2007; 2008). This literature is complemented by a small body of work that provides cases where collaboration between researchers and practitioners has succeeded (e.g. Hoarau and Kline, 2014; Pyo, 2011).

Some advocates for strengthening the research-practice nexus advance their position not in utilitarian terms but as part of wider debates about the nature of social scientific enquiry. The argument is that complex social phenomena, in this case those associated with tourists, tourism and tourism organisations, are best understood by combining the knowledge(s) produced by academics with that produced by other actors (Gherardi and Strati, 2012). To that extent, academic knowledge is not privileged (Zhang, Xiao, Gursoy and Rao, 2015). Thus, not only might the research agenda be co-created to positive effect but, as one of the most celebrated advocates of 'engaged scholarship' suggests, shared ontology, methodology and epistemology will result in 'better' or more meaningful social and organisational research (Van de Ven, 2007); looked at this way, it is not only that research conducted in this vein has greater traction with practitioners, it also explains more (see also Pettigrew, 2011; Simpson and Seibold, 2008; Starkey, Hatcheul and Tempest, 2009). Phillips and Moutinho's (2014: 96) recent observation that strategic management research in tourism and hospitality 'has not kept pace with practice' rests on such precepts. In addition, elements of the call for post-disciplinary tourism enquiry made by commentators such as Coles, Hall & Duval (2006; 2016) resonate with the plural and more flexible approaches to knowledge construction implied by this constituency of academic researchers.

Not all researchers consider the emphasis on relevance and impact to be self-evidently desirable (see, for example, Watermeyer (2016) and the recent debate on the need for relevance in tourism policy research led by Dredge (2015), followed by others such as Thomas (2015), and the related dialogue on the 'rigour-relevance gap' in management studies e.g. Beech, MacIntosh and MacLean, 2010; Hodgkinson and Rousseau, 2009; Kieser and Leiner, 2009; 2011; Nicolai and Seidl, 2010). For some, the presumed synergies between the research community and practitioners are problematic because of the almost inevitable failure to agree on what is worthy of investigation and what constitutes knowledge (epistemology). Moreover, the growing emphasis given to impact by policy-makers has prompted changes to academic identities (Clarke, Knights and Jarvis, 2012) and led some researchers to advocate greater reflexivity or academic resistance (see Belhassen and Caton, 2009; Low and Everett, 2014; May and Perry, 2013; Sayer, 2015).

Associations that represent the interests of academic researchers often make claims about the positive impact on society of social science research. The introduction to a recently published report entitled 'The impact of business school research: economic and social benefits', for example, asserts stridently that:

> The creation of original knowledge is something that … business schools excel at. But they also excel at 'impact', taking that academic work and turning it into knowledge that is useful and used by business, government, and society more broadly (The Association of Business Schools (ABS), 2015:1).

The equivalent association in Australia makes similar claims (Australian Business Deans Council, 2014) and the Academy of Social Sciences has an established series of publications which performs the same promotional function (https://acss.org.uk/publication-category/making-the-case/). The lack of equivocation in such documents is not usually matched by frameworks or data that explain why and when impacts occur. This is perhaps not surprising given their remit. By contrast, international programme accreditation organisations are now starting to expect institutions to show how they achieve impact beyond the university. The Association to Advance Collegiate Schools of Business (AACSB), for example, incorporates impact explicitly as part of its research requirements (Gerrard, 2015).

Perspectives on the adoption of academic research are present, sometimes incidentally, in studies of knowledge transfer in tourism (e.g. Shaw, 2015; Shaw and Williams, 2009), policy learning (e.g. Evans, 2010), and the innovative and competitive practices of tourism organisations (e.g. Hall and Williams, 2008; Hjalager, 2010; Thomas and Wood, 2014; 2015; Weidenfeld, Williams, and Butler, 2010). For example, there has been a growing interest in the acquisition and use of external knowledge for competitive purposes within organisations and destinations. In theoretical terms, the suggestion is that relative 'absorptive capacity' (or the ability to acquire, assimilate, transform and exploit knowledge external to the organisation) differentiates the innovative from the non-innovative enterprise or destination. However, it is striking that most empirical studies suggest, at least by inference, that universities are unimportant sources of knowledge to the actors who are the subjects of enquiry (see, for example, Shaw, 2015; Thomas, 2012; Weidenfeld et al, 2009).

Mechanisms, mediators and models of impact

There are numerous potential formal and informal collaborative arrangements established between universities and commercial or non-commercial organisations for the purposes of research and knowledge exchange. These range from episodic commissioning of projects to joint funding of research institutes. Their incidence varies by discipline, with a stronger tradition of more formalised institutional partnership arrangements existing in STEM (science, technology, engineering, mathematics) subjects (Bozeman, Fay and Slade, 2013; Bozeman, Gaughan, Youtie, Slade and Rimes, 2015). This is probably because of the evident need for technical expertise and training in some sectors of the economy and the conspicuous business advantages to be gained from being at the cutting edge of scientific knowledge which may have commercial applications.

Figure 1 provides a visual representation of, first, the kind of scholarship that is discussed in Boyer's (1997) widely cited work. Although certain kinds of scholarship are more conducive to particular forms of collaboration (for example, discovery research might more easily lead to the formation of a roll out company set up with investment intermediaries) they all have the potential to generate impact. As Bastow et al (2014) point out, in the social sciences,

research endeavours are generally collaborative and advances in knowledge incremental; there are few instances of breakthroughs that transform disciplines or fields entirely. This suggests, in turn, that there are few opportunities for 'first mover advantages'. The sharing of social scientific knowledge also means that universities face competition from a range of potential mediators or intermediaries, as well as opportunities for collaboration.

FIGURE 1 ABOUT HERE

Some of the formal collaborative arrangements that lead to research impact are created as partnerships between university research groups and organisations rather than as sporadic project-led initiatives between individuals. The synergies aspired to from such institutional co-operation are not assured but potentially yield advantages for the individual academic because opportunities for impact may be created by others in the group (Bastow et al, 2014).

Available evidence of academic research impact on practitioners in other fields is mixed. Banal-Estanol et al's (2015; 1173) research among engineering scientists, for example, implies that the:

> collaboration-publication relationship could be described by an inverted U-shaped curve …. Links with the private sector may boost research output because collaboration can provide new ideas and additional funding. But high degrees of collaboration can also damage research output.

They also review studies in their field which offer contradictory evidence. In doing so, they highlight a range of potentially important individual and organisational variables which might influence impact (see also Perkmann, Tartari, McKelvey, Autio Brostrom, D'Este, Fini, Geuna, Grimaldi, Hughes, Krabel, Kitson, Llerena, Lissoni, Salter and Sobrero, 2013).

Bastow et al (2014) are among the very few contributors to have modelled academic impact in the social sciences. Their study, which encompassed more than thirty disciplines (some of these might be described by others as fields) found that 'core' social scientists were more likely to have a profile outside the university than others, notably by comparison with STEM scientists, by a margin of 40 per cent. This is probably accounted for by the range of topics

dealt with by social scientists that resonate with the media, government, businesses and the general population. Perhaps more importantly, their study found that each of the following was significantly related to enhanced impact: age (up to a point), location (opening up the possibility for some of greater ease of access to senior personnel in a range of occupations), being a professor and having a PhD, and their visibility on the web. Although their research does not lead to a clear set of factors that explain impact, one of the most interesting empirical findings is that there is 'a distinct link between scholars generating excellent academic research and publications and having concentrated external impacts … so (they argue)… the processes involved in researching, engagement with external organisations or sectors, and publishing, all enhance both aspects' (Bastow et al. 2014: 103).

Though providing a valuable starting point, the research has limitations. The most prominent among these is the small number of individual studies from each field. Thus, while there is acknowledgement that there are differences between disciplines, there are insufficient data available to provide anything other than general observations. By focusing only on tourism researchers (encompassing events and hospitality), this paper offers a much more detailed, and nuanced, account of research impact in this field.

Several studies explain how learning takes place among practitioners in tourism. Prominent features of the explanations include peer-to-peer networks, some of which are facilitated by external agents which might include universities (see, for example, McLeod, 2015; McLeod, Vaughan and Edwards, 2015; Kelliher and Reinl, 2011). However, there is a severely limited research base that provides sophisticated theoretical propositions and robust empirical accounts of the potential means of creating greater collaboration between universities and practitioners in this sector. Hoarau and Kline (2014) and Shaw (2015) are exceptions, showing how innovation might occur in tourism via co-creation between universities and practitioners. The detailed case study provided by the former offers persuasive evidence of several product, managerial, institutional and process innovations arising from a collaboration between marine scientists with research interests involving whales, and whale-watching tour companies in Iceland and Norway. The historico-descriptive account of the engagement between the academics and the practitioners is used to illustrate the importance of sharing tacit and explicit knowledge possessed by both parties. This is

enabled by the emerging build-up of social capital and participation in a process of strategic reflexivity. The conditions that existed in these cases were such that all parties, notwithstanding their differing priorities, were able to benefit from engagement with the other actors. Consideration of how tourism academics, as opposed to marine biologists, might engage with practitioners in a similarly productive manner remains to be demonstrated.

A related perspective is promoted by Pyo (2005; 2011), who argues that the perceived mismatch between the knowledge produced by academics and the needs of those operating in destinations can be resolved by adopting a needs gap-kano-prioritization procedure. As is implied by the title, the suggestion is that knowledge needs are prioritised and, through an iterative process of clarification and refinement, the gap between the perceptions of academic researchers and practitioners within destinations is reduced. The illustrative cases from South Korea demonstrate that knowledge needs are place-dependent. Pyo's (2011) later work corresponds with the findings of Ankrah, Burgess, Grimshaw and Shaw (2013) who found shared organisational benefits arising from collaboration between university and industry actors. As the test-bed for the research was a technology based collaboration that attracted government funding (subsidy), this is perhaps somewhat less surprising and innovative than Pyo's (2005) study.

One corollary of Pyo's (2011: 1173) research is that destination managers 'can strategically and efficiently invest its resources into knowledge production'. In many developed economies, resources available for research within destinations is often sparse. The universal application of Pyo's model is, therefore, difficult to imagine for a substantial number of destinations. As the funding of academic research often takes place within a national framework and the responsibility for ensuring that research projects make an impact on practice lies with individual academics and university departments, the strategies of engagement adopted are, generally, far more personalised and institutionally specific than appears to be the case in South Korea.

RESEARCH DESIGN AND METHODS

The primary aim of the project was to document the non-academic impact of tourism research using the UK as a case study to understand why some academics have greater influence on non-academic constituencies than others. The research design was comprised of three stages. The first involved interrogating the Research Excellence Framework (www.ref.ac.uk/) web site. The periodic British university research appraisal system is selective, to the extent that universities choose which members of staff they nominate for assessment, and discretionary, in that universities have a choice about whether to submit to any or all units of assessment (disciplines or cognate fields of study). Full-time academic researchers submit their four 'best' publications for assessment by a panel of their peers (this number is reduced for researchers who have had extended periods of illness or have been on maternity leave and for early career researchers). In 2014, sixty five per cent of the assessment was concerned with the quality of research outputs, twenty per cent with impact on non-academic audiences and fifteen per cent with the university's research environment.

A search for research outputs containing the keywords 'tourism', 'hospitality' or 'events' (a process of screening was used to remove anomalous outputs where 'events' might have been used in a different context) yielded a total of 563 outputs submitted across 26 disciplines or fields. As most research (two-thirds of the total) was submitted to Units 19 (Business and Management Studies) and Unit 26 (Sport and Exercise Sciences, Leisure and Tourism), these two units became the focus of the study. Although this decision meant that some potentially important tourism scholars became supernumerary, it also ensured that those with only a passing interest in the field were excluded. This is important because the aim of this project was to understand more about the impact of the work of tourism scholars. The results yielded a list of institutions that were relatively predictable but also included researchers within larger business schools that were more widely known for their research on non-tourism related matters.

Clusters of research activity within Units 19 and 26 were then identified. Groupings of two or more researchers, who between them had submitted at least six publications relating to tourism, were deemed to constitute a 'cluster'. Eighteen such clusters were identified between the two units, containing 111 staff. These 111 academics became the sample for

the first stage of the project. They had all produced sufficient quality research outputs in the past six years (i.e. between the previous assessment and the 2014 audit) to be nominated by their own instruction as worthy of assessment (institutional selectivity decisions about including those whose work might be deemed 'unclassified' has risks for managers seeking to inflate their reputations) and all worked within a wider institutional cluster of tourism researchers (made up of at least one other person). The REF results web site not only contains data on the quality of outputs but also on the claims made by universities about their non-academic impact. To be precise, universities are required to explain how their research causes a 'change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia' (www.hefce.ac.uk/rsrch/REFimpact/ accessed 3rd May, 2016). This takes the form of impact case studies (a minimum of two cases for a submission of up to fifteen people plus one case study for every additional ten members of staff submitted) and an impact 'template' which explains how institutions had attempted to maximise their non-academic impact.

The second stage of the research involved building an academic profile and impact profile for each of the 111 researchers. In response to calls to make greater use of digital sources of data (Elliot and Purdam, 2015; Halfpenny and Procter, 2015; Purdam and Elliot, 2015), the second stage used non-reactive digital methods i.e. data gathering did not involve direct contact with subjects but used information freely available in the public domain. Following Bastow et al (2014), three systematic Google searches were used to construct the required profiles for each researcher. The first identified the academic and grey-literature outputs produced by the 111 researchers between 2008 – 2015 using the Google Scholar advanced search function. This established their breadth of academic activity during the audit period. In addition, biographical profiles were constructed for each researcher based upon publicly available information e.g. Curriculum Vitae and web profile information.

The second search identified citations by other academics to outputs produced by the selected academic, again using Google Scholar. These two searches produced the 'academic influence' of each researcher. The final search was conducted using the standard Google search function to create 'impact profiles' for each of the researchers. These were constructed by reference to their visibility within web domains. In addition, searches were

conducted using the Nexis press database to identify media references to the selected academics.

For the three searches, the data for each of the variables were coded and scored according to a quartile scoring matrix (e.g. 0, 0.25, 0.5, 0.75 and 1) (precise details are available from the authors). Aggregate scores for academic and external impact were then derived for each researcher. Prior to analysing the full sample, piloting and cross-checking were conducted on eight researchers within the sample. This was undertaken in an attempt to reduce coding and searching inconsistencies.

The final stage of the research involved interviewing nine purposively selected academic researchers. These included Associate Professors (Readers) and full Professors from research intensive and teaching intensive universities. The semi-structured interviews were designed to elicit perceptions of the 'impact agenda' and how this was influencing the behaviour of researchers. It was also used to help refine the analysis of the qualitative data on impact contained on the REF results web site and the quantitative data garnered from the Google searches.

Inevitably, studies such as this suffer from limitations. These include standard methodological issues such as the selection of variables and ascribing causality to the relationships identified. It is also probable that the digital methods used have not entirely captured the impact of academics' work. Clearly, if an individual undertakes commissioned work from an organisation that prefers to keep the arrangement private, it would not have been found in the open searches undertaken as part of this research. This is a concern but the evidence gathered from other sources, i.e. the targeted searches to build profiles of researchers, the REF impact case study data which would promote most significant impacts and the interviews, suggest that such work is limited. Other limitations may arise from the culturally specific context of the research. This suggests a need for similar work to be undertaken elsewhere and for more qualitative enquiry. The latter might usefully include a focus on 'failed' attempts at generating impact as well as instances of success. Finally, as the impact of social science research is unlikely to be linear, at least on a consistent basis, drawing theoretical conclusions from this study must be undertaken with care (Finch, 2016).

THE IMPACT OF TOURISM RESEARCH

The collective 'footprint'

References to the work of tourism academics on the web pages of non-academic organisations provides the basis for creating a collective digital 'footprint'. Figure 2 compares the results with those reported by Bastow et al (2014) for social scientists more generally and for academics working in STEM subjects. Technically, the data may not be directly comparable but there are few reasons to suppose that had they been gathered over the same period, the results would be significantly different.

FIGURE 2 ABOUT HERE

The 'traditional academic' category at the bottom of Figure 2 refers to university web sites, libraries and related online repositories, academic journal web sites and those of other publishers. It should be noted that while these spaces are primarily for academics, this category may include material that has an impact beyond academia as universities promote their outputs to a wider audience. It is noteworthy that even though the tourism column only includes what might be considered to be an elite group of academics (i.e. those selected to be included in their institution's REF returns), the proportion of references to its work among academics is much smaller than for social sciences more generally and for STEM subjects. This implies, prima facie at least, a greater engagement by tourism academics with mediators and society more generally compared with academic counterparts in other fields and disciplines.

What is labelled the 'mediating middle' refers to those organisations that act as intermediaries by promoting or translating academic research. These include the media, professional (including subject) associations and learned societies, think-tanks and academic networks. Almost two thirds of the references to academic work of tourism scholars can be found in these spaces. This implies significant activity relating to the promotion and circulation of academic work in tourism. To some extent this appears to confirm an engaged

community of academics who have their work referred to on the web sites of organisations external to their universities (but who may, nevertheless, be closely related to academics e.g. subject associations).

Arguably, the most significant category of non-academic impact is that which contains references to academic work by 'external society'. This includes commercial, official and non-governmental organisations. As Figure 2 shows, this is strikingly lower at 7 per cent for tourism academics than it is for social sciences generally (20 per cent) and STEM subjects (16 per cent). On this basis, it appears that academics in tourism have a relatively small impact on policy-makers and other practitioners.

The impact case studies and 'templates' (i.e. institutional descriptions of their approach to impact) broadly confirm this assessment. The official REF web site reveals that 128 impact case studies were submitted to Unit 26, Sport and Exercise Sciences, Leisure and Tourism. Of these, only seven made claims about their impact on practitioners in tourism, with the vast majority of the remainder being concerned with sport science. There were an additional five tourism impact case studies submitted to Unit 19 Business and Management Studies. Three principal types of evidence of impact were used to support the claims to impact in both units: citations in official reports, media citations, and participation in influential (and usually selective) networks or panels. In addition, there were instances of universities including letters of support or endorsements from what were seen by proponents as key actors.

Individual case study evaluations are not published. However, by reading the aggregated results, it is clear that at least some of these produced 'outstanding impacts in terms of their reach and significance' whereas, for others, it was deemed that 'the impact had 'little or no reach and significance; or the impact was not eligible; or the impact was not underpinned by excellent research produced by the submitted unit' (REF, 2014: 60). The low number of impact case studies submitted suggests a limited availability of high impact work. Unfortunately, apart from confirming that 'it saw excellence in tourism impact case studies' (REF, 2015: 119), the assessment panel provided only general comments on performance (i.e. feedback relating to the unit as whole). If those assessing the tourism case studies

conform to the assessment of other fields, it appears that they struggled to differentiate between submissions and were broadly generous in their evaluation (Finch, 2016; Grant, 2016).

What follows seeks to identify the factors influencing the impact of individual researchers on non-academic actors. To do so, it uses three groups of variables: those relating to the individual, to academic output and to external visibility. It begins by modelling academic impact.

Academic impact and determinants

The purpose of this aspect of the research was to identify the main characteristics which led to the work of some academics being cited more than others (academic impact). Establishing the determinant characteristics of academic impact was then used as part of an analysis of factors influencing non-academic impact.

The starting point was to build a detailed profile of each academic 'subject' (actor). Academic impact (the dependent variable) was measured in three ways: first, via the average number of citations for all outputs published between 2008 – 2015 which included the REF auditing period; second, via the most cited article of an academic during the same period; third, via total citations from other academics (not limited to the review period). Negative Binomial Regression (NBR) analysis using Statistical Package for the Social Sciences (SPSS) Version 21 was then used to understand which independent (explanatory) variables contained in the profiles were responsible for the contrasting levels of academic impact. Due to the use of count data dependent variables within the model, NBR was selected as the appropriate regression model for the dataset. Table 1 contains the results of the regression analyses using each measure of academic impact.

In Table 1, the first number in each cell contains the Incidence Rate Ratio (IIR) which shows the probability of a unit rise in the independent variable resulting in an increase or decrease in the dependent variable. An IIR above 1 indicates an increase in a positive direction. The number in parenthesis gives the standard error for the IIR i.e. the likelihood of the result

having arisen by chance. The numbers in bold highlight the strongest relationships between the variables and are, generally, of greatest interest for the purposes of this paper.

There is much in Table 1 that is relatively predictable; being a professor, having a PhD and being older exert a significantly positive influence on some or all of the indicators of academic impact. In addition, the data suggest that an increase in the number of co-authors increases average and top citations significantly. This may be because the productivity of academics goes up via collaboration or that the higher number of authors attracts attention from additional constituencies of academics who then cite those pieces of work. It should also be noted that variables such as the location of the university where the academic works, the number of years since gaining a PhD, the status of the PhD awarding institution, the gender of the academic, their membership of associations or holding positions of responsibility are all poor predictors of academic impact.

TABLE 1 ABOUT HERE

The more interesting aspects of the data lie elsewhere. In an age when academics are encouraged to promote their work using social media (see, for example, Carrigan, 2016), it is noteworthy that the production of online CVs and using Twitter are the only significant predictors of academic impact. These findings are consistent with some studies (e.g. Shema, Bar-llan, and Thelwall, 2014) but run counter to others (e.g. de Winter, 2015: 1773) who suggest that 'the scientific citation process acts relatively independently of the social dynamics on Twitter'. The conflicting evidence prompts an urgent need for more research and clearer theorising before this aspect of academic work can be commented upon with confidence.

Perhaps one of the most significant outcomes of the research in the context of this paper is the connection revealed between the external profile of the academic, i.e. the appearance of his or her work on the web sites of non-academic organisations, and his or her academic impact; the former is a strong predictor of academic standing. This is important because it provides the first indication of a relationship between the academic and non-academic profile of senior academics.

The nationality of the researcher appears to exert an important influence on total citations. This is difficult to explain but may be because the relatively few non-British academics in the sample are represented by particularly prolific international scholars.

Modelling non-academic impact

This section examines the characteristics of academics that attract the attention of those working in businesses, government departments and non-governmental organisations (NGOs) as indicated by their non-academic digital footprint. This is a challenging and finely grained test because it relies upon independent agents choosing to mention the contribution that academics have made to their mission, rather than academics doing so themselves. Unlike Bastow et al (2014), who limited their search to the first 100 relevant search results, this study struggled to find web references beyond 50 for even those who were most prominent. As a control measure, all searches extended to 300 Google 'hits' (30 search pages) to maximise the chance of identifying a relevant reference. The most striking feature of the searches was, therefore, the very low incidence of academic work being referred to by others (see Table 2).

TABLE 2 ABOUT HERE

The next stage of the study was to identify the characteristics associated with academics that enjoyed non-academic impact. The explanatory variables used in the three regressions were the same as those used to model the academic impact except that what were then dependent variables (i.e. average citations for all outputs, top cited article and total citations excluding self-citation) became independent variables. This is because there is a suggestion in the literature that they might influence non-academic impact.

In Table 3, the results of three regressions which help explain the impact of academic researchers on non-academics are presented. Each regression uses the same dependent variable i.e. non-academic impact as measured by their digital footprint, but additional

independent variables are introduced in order to add sophistication to the modelling (with Regression 6 being the most sophisticated).

Regression 4, the simplest of the models, focuses on the extent to which the characteristics of the individual influences their profile outside academia. In this case, the only statistically significant results relate to individuals' highest qualification (which becomes less important as the regressions become more complex) and, to a lesser extent, their taking up of a position of responsibility with a non-academic organisation (which also becomes less significant as the sophistication of the model increases). The potential importance of these variables is understandable because the former affords status, or appropriate credentials, whereas the latter may forge direct access to various constituencies. It is interesting to note that professorial status is not a statistically significant predictor of non-academic impact but plays a far more important role within academia.

Citation data were added to regressions 5 and 6. Regression 6 also contained average number of co-authors as a variable. This was included because in some studies, this has been found to be a statistically significant factor in reducing the external profile of social scientists i.e. when the number of researchers involved increased, it had the effect of decreasing the visibility of individual researchers (Bastow et al., 2014: 81). No such relationship was found in this study. Similarly, there were no statistically significant results found to suggest that generating 'noise' via social media as a means of fostering relationships with, or gaining the attention of, practitioners has much effect (cf. Badgett, 2015; Carrigan, 2016; Reed, 2016) .

The role of social media in promoting non-academic impact is particularly interesting because it is a theme several of those interviewed raised, either as a perceived successful strategy for achieving impact or because their lack of engagement with these media was seen as a deficiency. The following illustrates both perspectives:

> A colleague at one of the institutions I met at a conference, and I've seen a couple of times recently, he's tweeting during the conference and posting photographs of things. So you're not only in the room, you're

> also all over the globe at the same time. And, you know, this counts as impact. How the guy's not highly stressed I don't know. Because we're seeing these 24/7 academics, as I call them, who never get away from their smartphone and everything. And somehow this counts as impact. You know, some of the storylines are great. The idea that you can influence government policy, blah, blah, blah (Int.5).

> So I know I play the game…. all the work I do on LinkedIn and Facebook and Twitter and YouTube … a way of trying to raise our profile, of what we're trying to do here collectively … I would say (I have been) relatively successful (at generating non-academic impact), but I have not been very good at collecting data or evidence of that (Int.9).

Several commentators have noted the cultural changes taking place within higher educational institutions relating to the engagement of non-academic audiences (e.g. Sayer, 2015; Grant, 2016). Tourism scholars are evidently not immune to this apparently inexorable development within their workplaces. In this respect, the passages above illustrate another prominent theme arising from the interviews with researchers, namely that of seeing their response to the impact agenda as 'game playing'. Notwithstanding general support for the principle of creating stronger links between academic research and practice, the sense of needing to find linear connections between research activity and impact appears to be promoting particular kinds of actions, notably those which leave an 'evidence trail' (e.g. via the web or other media). Some would argue it also influences the research practices of tourism scholars (e.g. Thomas, 2011).

TABLE 3 ABOUT HERE

The most statistically significant influences on non-academic impact revealed by Regressions 5 and 6 relate to total outputs and the most (academically) cited article during the audit period. It must be noted, however, that the effects appear to be modest (e.g. one additional paper would have a 3% probability of increasing external profile; presumably,

there is a cumulative effect whereby prolific authors have greater visibility). Age also becomes a statistically significant predictor of non-academic impact but at similarly low levels of probability. These results suggest that well established academics who are also consistently prolific attract the attention and interest of non-academic audiences.

One interviewee almost embodied the findings. The following account (amended to maintain anonymity) reveals a set of values and working practices which emphasises continuity in research and scholarship as a primary focus. Research is facilitated via regular public (research grant) and private sources of funding and this ensures sustainability, and ultimately, impact:

> That led in turn, then, into a (funding body) grant, which was a small grant which we got …. We were interviewed on the radio, and I think the younger colleague was interviewed on some TV programmes, and stuff, you know, the very limited ones. But we had a lot of press coverage ….. It was from that we then launched the follow-on application (for additional peer reviewed funding). And then from that follow-on application, (name of a major company) got in contact with us, so (name of major company) wanted us to do a project on (detail removed). Which we did for them, and it's a comparative study between (country X and country Y). So that potentially is an impact case study in the future, because we have that *(sic)* data. … I know that if you want to get money now …. impact in a big way through its grants. So if you look at the way the EU grants have been framed, you have to have an impact section somewhere, you have to say what the impact would be. So it has changed (Int.2).

The approach to research exemplified by this passage provides a persuasive counterpoint to those advocating greater investment of academic time in promoting the work of researchers without correspondingly emphasising the need for quality, as recognised by academic peers.

CONCLUSION: THEORISING IMPACT

This paper has been concerned with explaining why some tourism researchers have greater impact on non-academic constituencies than others. It has done so using data from the UK's latest research evaluation exercise, the Research Excellence Framework (REF 2014), publicly available information about the UK's leading tourism researchers and their digital footprint, and semi-structured interviews with a selection of active researchers. The latter were used primarily to help interpret the quantitative data; the statistical relationships were reflected upon in light of the practices of research active academics in order to theorise non-academic impact.

Figure 3 provides a diagrammatic representation of the theoretical implications of the study. Its starting point is to recognise the overlapping nature of much academic work. In practice, most tourism researchers produce research outputs (by definition) and fewer engage in consultancy work, advocacy (for example, in favour of sustainable tourism by becoming active in campaigning networks), or are successful in bidding for peer reviewed research grants. There are several potential explanations for this, ranging from variable teaching loads to levels of expertise and experience. A key finding to emerge from this study, however, is the pre-eminent role of quality outputs (rather than a highly influential paper or 'discovery') in building strong academic profiles which, in turn, strengthens impact profiles when combined with experience.

There are several sets of activities undertaken by academics that are designed to promote impact. The two most prominent among tourism scholars relate to their utilisation of social media and practitioner networks. Contrary to some received wisdom, the evidence from this study suggests that while the former may generate 'attention', to a large extent this is 'noticed' mainly by fellow academics. It is helpful, therefore, in enhancing academic rather than non-academic profiles. While there is evidence of impact arising from engagement with practitioner networks, this activity is also a poor predictor of impact when attention shifts from isolated examples. As Figure 3 shows, individual characteristics also play a role in achieving academic and non-academic impact, notably in relation to age. This is to be expected as 'age' probably reflects a gaining of experience, expertise, an ability to act more

autonomously and an accumulated body of work. All of these strengthen an academic's profile and probably enable them to engage more effectively with their peers and external agents, when opportunities arise.

FIGURE 3 ABOUT

The study has implications for the research strategies of those who are concerned to strengthen the impact of their research. It implies building a strong body of outputs and promoting them to fellow academics. It also suggests that endeavours to reach non-academic constituencies, be they via social media or by developing personal networks, are likely to be less valuable than publishing a greater volume of better quality (as judged by peers) research. A re-thinking, and potentially co-construction of research projects (Van de Ven. 2007) as a means of achieving mutual benefit may be in order, though we found no evidence of this in practice. Clearly, there are dangers of what Lovering (1999) termed 'theory led by policy' if researchers merely follow the agendas set by others; the questions that are deemed important and the manner in which they are investigated become dictated by the powerful.

For research managers, the analysis has implications for effective resource allocation as they invest in endeavours to generate impact. On the evidence presented in this paper, the incremental increases in expenditure on impact witnessed in the British context does not appear to be achieving the intended outcomes. Indeed, greater investment in higher quality research appears to be more likely to achieve impact. Moreover, there is a case to be made for strengthening the connection between research and teaching, and rewarding those who are most effectively able to create reflective life-long learners. It is probable that the legacy of this kind of effort will be more significant and long-lasting.

The study raises many questions that are worthy of further enquiry. In the British context, for example, is the generally low level of impact a function of the politically marginal position of tourism? It is well-know that the strenuous lobbying efforts of key actors with the goal of relocating tourism to a major government department (business) have conspicuously failed. Does this produce a lack of leadership that diminishes the likelihood of

brokerage between universities and practitioners? Is the low level of technical knowledge generally associated with jobs in tourism a contributory factor to low engagement? Does the relatively marginal status of tourism as a field of study (it is generally located in non-research intensive universities) fail to attract sufficient intellectual talent to produce insights with sufficient sophistication to inform the deliberations of practitioners? Regardless of whether these and other questions are pursued, above all the paper signals the need to engage in more rigorous theoretical and empirical analysis of an issue which appears set to be a prominent feature of the institutional landscape for some time to come. It also goes to the heart of how tourism scholars direct their efforts and construct their professional identities.

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