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Martina Stoff-Hochreiner[a], Christian Mutschlechner[b], Andreas H. Zins[c*]

[a]Martina Stoff-Hochreiner Consulting, Vienna, Austria; [b]Jwc Co. Ltd., Cologne, Germany; [c]Faculty of Business Curtin University Malaysia

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Developing a Proxy for The Value of Knowledge Sharing of International Congresses

Martina Stoff-Hochreiner[a]; Christian Mutschlechner[b] and Andreas H. Zins[c*]

[a]Martina Stoff-Hochreiner Consulting, Vienna, Austria; [b]Jwc Co. Ltd., Cologne, Germany;
[c]Faculty of Business Curtin University Malaysia

Research Note

Corresponding Author:
Andreas H. Zins, Faculty of Business Curtin University Malaysia

E-mail:
andreas.zins@curtin.edu.my

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Vienna as a capital city in the heart of Europe is considered a first-tier destination for congresses and conferences (VCB, 2022). The Vienna Convention Bureau (VCB) has been reporting statistics on the demand and economic impact about its congress and conference sector since 1991. The contribution to overnight tourism demand fell from a long-term average of around 11% before COVID to 6% in the year 2021 (VCB, 2022). International congresses contributed 39% of total participants, 68% of overnights, 74% of induced economic impact and 75% of induced tax income for the City of Vienna according to the Event Model Austria (© Consulting Dr. Martina Stoff-Hochreiner). This academically recognized model supports specific extrapolation of the spending induced by congresses according to multi-dimensional classification criteria, as well as their economic and tax effects. The Event Model Austria is constantly updated (economic and tax parameters specific to the Austrian economy, regular surveys with congress participants, exhibitors and experts) to ensure accurate economic impact assessments. Congresses and conferences in the medical segment are responsible for about 40% of the international demand followed by natural science (with 15%) and economy and politics (with 12%; VCB, 2022).

While the economic impact of the MICE sector has been assessed continuously and transparently throughout decades, these statistics are running short of demonstrating many other effects congresses

might induce. To fill this gap, the VCB conducted a study together with the European Society of Radiology the world's largest professional community in the biomedical field, highlighting the importance of education and knowledge transfer. The European Radiology Congress 2018 attracting more than 28,000 radiology experts and industry representatives offered knowledge transfer that survey respondents valued at more than 800 million euros, by far exceeding the estimates of the event's economic impact on the city. The study results are based on a representative survey among 14,000 people attending the congress in person with about 10% response rate or 1,084 attendants and 230 speakers for the survey. The survey addressed questions about the individual motivation and perceived benefits as well as the efforts (ie. time and monetary investments) behind the new knowledge presented and exchanged by the participants.

The relative majority of respondents (48%) came from one of the EU-15 countries and 15% from the new EU countries. Austria accounted for 7%. Almost exactly two thirds of participants in the survey came from an EU country. 13% of the delegates lived in a non-EU country, and 10% came from Asia. America accounted for 4% of the total, Africa 2% and Australia 1%. The largest proportion of respondents were hospital doctors (58%) or physicians in private practice (11%). 8% were from the 'Care, technician, service' category. Medical physicists and students each accounted for 5% of the total. 3% were from the 'Technology' segment. In terms of gender and age, there was a fairly even split with 57% male and 43% female. 14% of the respondents were under 30 and 11% were 60 or over. The 30s, 40s and 50s age cohorts each accounted for roughly a quarter of the total.

Science was cited as at least an 'important' reason for participating by 70% of the respondents. 64% cited networking as 'important' which was particularly important for visitors from Asia and those from the industry.

For 57%, vocational training was an important motivating factor for participating in the ECR 2018. This was particularly pronounced by respondents from Austria, the hosting country. Research meetings were elicited s at least an 'important' reason for attending by 57% of the respondents. Survey participants from Asia attached significantly greater importance to this aspect. Rated as 'important' or 'very important' by 51% of the respondents, initiation of scientific projects was in fact the second-least priority attached to the congress participation, though much higher ranked for non-European attendants.

Exhibition of new technological developments was a reason given by 61% for attending the congress. Respondents under the age of 40 and, above all, people in the 'Care, technician, service', 'Medical physicist', 'Technology' and 'Industry' categories were most interested in seeing innovations on show.

When it comes to gaining advantages in terms of specific knowledge, new collaborations or perspectives for future professional work, satisfaction levels were very high: 60% or more of respondents reported some form of personal gain in each of the six areas covered by the survey, with satisfaction rising to 90% for 'Care of patients, diagnosis, therapy'.

In terms of 'Care of patients, diagnosis, therapy', 'have learned something new' was the most commonly cited response (64%). 11% indicated that they had 'planned cooperation' (with 'Scientist, non-physician' the dominant group). 7% indicated that they had 'arranged cooperation', with 'Industry'

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representatives featuring disproportionately. 8% of those surveyed reported that they had 'realized new deal(s)' in terms of 'Care of patients, diagnosis, therapy'. In this area, the 'Technology' and 'Care, technician, service' segments benefited in particular.

'Use of new technologies' was the most important aspect after 'Care of patients, diagnosis, therapy', with 87% reporting personal success in this area. 50% cited having 'learned something new' (primarily younger participants), 19% 'planned cooperation' (primarily respondents aged over 50), 9% 'arranged cooperation' and 9% 'new deal(s)'. 'New deal(s)' chiefly related to respondents from the 'Industry', 'Technology' and 'Students' categories. 'Cooperation between different disciplines' was a success factor for 79% of participants in the survey. 33% learned something new (in particular younger people and medical physicists), 23% planned cooperation and 13% arranged cooperation. 10% of respondents realized a new deal in this area.

70% benefited from the opportunity to use new therapies. 34% learned something new (especially younger people), 15% planned cooperation after the congress and 11% had already arranged cooperation. Finally, 10% had already realized a new deal involving the 'Use of new therapies'. 'Cooperation domestic research projects' and 'Cooperation international research projects' were lower down the list of successful outcomes associated with participation in ECR 2018. 60% (international) and 61% (domestic) of participants in the survey named cooperation projects as a personal success factor.

In the domestic cooperation category, 'learned something new' was cited as a factor by 15%; 'planned cooperation' was named by 20% and 'arranged cooperation' by 15%. In 11% of cases it led to the completion of a deal. International cooperation was named as a source of learning something new by 17%, as something planned by a further 17% and something arranged by 15%. 11% of international research projects involved completion of a deal.

In light of these responses, it is hardly surprising that just 2% of those asked felt that ECR failed to live up to their scientific expectations. On the contrary, 76% agreed that their expectations were met in full, and 22% indicated that they were partly fulfilled. As a group, only industry representatives showed any significant level of dissatisfaction. Expectations were most notably fulfilled in the categories 'Care of patients, diagnosis, therapy' (72%) and 'Use of new technologies' (68%). 41% of respondents saw their expectations fulfilled in terms of 'Cooperation between different disciplines', 28% when it came to cooperation on international research projects and 19% in terms of cooperation on domestic research projects. 24% felt that their expectations and requirements as regards the 'Use of new therapies' were met.

A total of 230 speakers took part in this study, of whom 95% (219 speakers) gave detailed information regarding preparation of the paper they presented. The vast majority of papers presented at ECR 2018 (89%) were prepared exclusively for the congress. Without exception, non-European speakers (except those from Asia) as well as speakers from non-EU European countries prepared their talks specifically for the congress. In 44% of cases, the presentations were prepared by the speaker alone, and a further 44% involved co-authors of equal standing. 22% of speakers worked on their papers with colleagues from their organization and 6% enlisted the support of colleagues elsewhere. 2% worked

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on their papers with other partners. Larger groups of co-authors were involved particularly often in talks given by Asian speakers, while papers were most likely to have been the work of a single author if the speaker was from one of the new EU countries or a non-European country (with the exception of Asia). Older authors showed a tendency to work alone.

The majority of co-authors of presentations are highly qualified: of the 109 presentations not authored by a single individual, 70 were compiled with the support of researchers working in academia (64%), 62 with the help of physicians at hospitals (57%), 17 with resident physicians (16%) and 6 with other researchers. Student employees and assistants were involved in just eleven and five cases respectively. External funding was the exception to the rule when it came to the projects presented at ECR 2018. Of the 194 presentation/papers, 25 (13%) received funds from third parties. The proportion of projects financed externally was higher among younger authors (students), researchers from EU countries and non-physicians. The few documented cases of third-party funding (25 projects) received an average of EUR 180,000, and funding of EUR 215,000 for student projects – the largest group in numerical terms – was significantly above the overall average.

At 44 hours, the average amount of time spent preparing a presentation (not including the underlying research) was relatively low. And at EUR 268,000, total investment per research paper or presentation at ECR 2018 should not be underestimated. In light of the number of presentations at the congress, the sums involved are highly significant from an economic perspective. In addition to the highly impressive numbers relating to the costs associated directly with preparing research papers, the medium- and long-term effects of the work presented at ECR 2018 is another interesting area.

The authors of the projects evaluated here demonstrated a high degree of confidence regarding the future impact of their paper or presentation, and identified a range of potential effects. In addition to the purely medical implications, the effects could also have an economic dimension: 71% of researchers expected their paper or presentation to have an impact on diagnosis, while 46% expected outcomes for patient care and therapy. 30% felt that their presentation would influence cooperation between different disciplines. At 37%, a significant proportion of respondents felt that their work would influence the development of new technologies.

Based on the total of 3,331 papers presented at ECR 2018 and the significant amount of time invested in them, as well as external funding, assuming an hourly rate of EUR 12 (lower end of scale), direct preparation costs can be estimated at around EUR 80m. It is not possible to evaluate the amount of time spent on the underlying research work and the related financial costs with any degree of certainty using the data collected in this survey. The few indications generated in the course of this study would appear to point towards total costs of up to EUR 813m. However, much more detailed and far-reaching surveys would be needed to determine the figure with more accuracy, in light of the amounts involved.

Rod Cameron, director of the Joint Meetings Industry Council, summarized: “The survey shows very clearly that the value of the meetings industry goes far beyond tourism alone. It is not just a way for [organisations] to quantify their own value and use this when reaching out to prospective members; it also represents an opportunity to gather further best-practice examples for use as industry

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benchmarks." (PCMA, 2018). Knowledge transfer through congresses is an acceleration instrument that enables much faster dissemination and awareness than publications. The annual radiology congress also attracted major decision makers from the European Commission, the International Atomic Energy Agency, and the World Health Organization, which, according to VCB, "promotes fruitful knowledge transfer, not just within the research community, but beyond it to clinical practice and policymaking." (PCMA, 2018).

These wider effects and impacts are partially reflected in such attempts as the Destination Competitive Index (GainingEdge, 2022) benchmarking international convention destinations (e.g. Vienna: rank 20, Kuala Lumpur: rank 16 among 101 cities worldwide) or the Global Talent Competitiveness Index (INSEAD, 2019) featuring Vienna as ranked fourth for the year 2019. "Institutions that host their congresses in Vienna are increasingly taking their content to the general public – information sharing plays a significant role in anchoring and raising awareness of Vienna's role as an international-class meetings destination," Peter Hanke, Vienna City Councilor for Finance, Economic, Digitalization and International Affairs, observed. "At the same time, meetings do much to promote the city's image, helping to position Vienna as a location for business and research, which supports our efforts to attract international enterprises and provide a breeding ground for start-ups." (VCB, 2019).

This type of study realized upon the initiative of Christian Mutschlechner, in 2018 director of the Vienna Convention Bureau by Dr. Martina Stoff-Hochreiner and the support of Mr. Peter Baierl, CEO of the European Society of Radiology, was the first one ever to dive deeper into the activities of a scientific congress, leaving behind the traditional economic-only value of a scientific meeting from a destination point of view. This study sheds light on one of the important functions of meetings, congresses and conferences: education and knowledge transfer. The monetary assessment of the efforts behind this particular congress (the ERC 2018 as a case example) does not focus on the touristic and meeting services expenditures necessary to enable the exchange of knowledge of about 24,000 participants. By contrast, it took the research funding and preparation time for the conference as comparable indicators for– at least –a partial counter-value of the entire event. The benefits are assessed through individual perceptions and ratings. For future research, it is recommended to apply social network analyses for mapping the volume and dimensions of interactions induced by such congresses.

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