



ERSA Conference participation: does location matter?

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Abstract. This article analyses participation in the annual European congresses of the Regional Science Association (ERSA) from 1998 through 2003. We formulate goals that the ERSA conferences should aim at and based on these aims we formulate hypotheses about conference participation. In the empirical part we test hypotheses with regard to the spatial distribution of the participants over countries, the distribution of the frequency of attendance among the participants, and the presence of distance decay in participation. All hypotheses are confirmed. We also pay attention to the relation between the frequency of attendance and distance. In the conclusions we derive implications for future conferences.

JEL classification: N01, R00, R12

Key words: conference participation, distance decay, conference location

1 Introduction

For a long period of time, philosophers have thought and written about the way science works or should work. In recent years, they have been joined by economists who are particularly interested in the incentive structures in science, and in the way scientific institutions work (for a review of this literature see Diamond 1993; Stephan 1996). This literature has mainly concentrated on publication counts “as a proxy for research activity” (Stephan 1996, p. 1216). Stigler and Friedland (1982a,b) were “one of the first to use citations as a measure of quality

in economics" (Diamond 1993, p. 116). More recent papers in this tradition are Baltagi (1999) and Conroy and Dusansky (1995).

In regional science, Rey and Anselin (2000) published the first publication analysis that covers a substantial set of journals. Earlier contributions like those by Strathman (1992) and Anselin (1995) looked only at the publications in one journal. The golden anniversary issue of *Papers in Regional Science*, published in celebration of the fiftieth birthday of the Regional Science Association, included a whole set of articles that analysed the generation of scientific ideas in the discipline and their dissemination through publications. Florax and Plane (2004) analysed half a century of articles published in *Papers in Regional Science* by geographical location of their authors. Waldorf et al. (2004) identified "path-breaking" books. Isserman (2004) used citation analysis in order to identify "intellectual leaders in regional science".

Despite all this attention given to publication records and citation patterns, another major element of the scientific knowledge production process, conferences and conference participations, have so far been largely overlooked. In this article we want to shed light on the role of conferences as an element of cooperation and knowledge production in regional science. We will do this by analysing participation in the annual European congresses of the Regional Science Association over the 1998–2003 period. Today, the European Regional Science Association (ERSA) has a prominent position within the worldwide Regional Science Association International (RSAI). About 46 percent of the 1,637 members of RSAI in 2003 are European residents, whereas the U.S and Japan each have 24 percent of the RSAI-members.¹ The European congresses organised by ERSA are the single most important regional science activity in Europe. Therefore, the CD-ROM's with information of the six ERSA conferences over the period 1998–2003 are useful sources of information to analyse conference participation. We will start with an analysis of the geographical distribution of the participants. In this context we will also pay attention to the question to what extent the numbers and geographical distribution of the participants are influenced by the conference location. We assume that distance and the attractiveness of the conference location are important explanatory determinants of conference participation behaviour. Furthermore, we will analyse the existence of a participation network by looking at repeated attendance of the conference by the same people.

In the next section we will discuss the role and function of conferences in the production of scientific knowledge and provide more information about the data. We will discuss the theory and methodology of the spatial dimension of conference participation. This will lead to a series of hypotheses that incorporate explicit attention for spatial arguments. In Sect. 3 empirical results will be presented about the geographical distribution the participants, and we pay specific attention to the role of distance. The article ends with a section that summarises the results, and formulates conclusions relevant for the dissemination of knowledge in regional science, and that also leads to recommendations for future ERSA congresses.

¹ Figures from July 2004 obtained from RSAI Executive Director Graham Clark.

2 Theory, methodology and data description

“Conferences” come in very different sizes and flavours. In terms of participants they can range from a few dozen to a couple of thousand. They may deal with a highly focused topic or try to cover a broad scientific discipline in its entirety. Also, the main goals of a conference can be quite different. Its aim may, for instance, be the exchange of new knowledge among participating researchers, the evaluation of some development, the dissemination of scientific knowledge to policy makers or to the general public, training of young scientists, or their integration into the networks of their scientific community. The annual ERSA conferences that we will analyse in this article are medium-sized events (with about 500 participants), covering the entire field of regional science and mainly focusing on communication and information exchange within the scientific community.

Given the fact that “communication is an essential part of any science” (Doswell 2004, p. 7), conferences are an essential part of the scientific process. The material presented at conferences is usually more closely related to the current work of researchers than any journal publication, and being in the same location at the same time allows for more immediate communication and discussion than any other scientific institution.

Garfield (1991, p. 294) notes “conferences serve many purposes, both professional and social”. His remarks can directly be applied to ERSA conferences as well: “They aim to foster efficient information exchange, offer the opportunity to investigate employment possibilities, and provide a chance for old friends to get reacquainted. With certain regularity and for a brief time a far-flung community comes together”. Noting this, however, Garfield is particularly concerned with the integration of young professionals that “many conferences serve (. . .) poorly”. “Graduate students and recent postdocs – the people who have the most to gain from attending a conference – often must overcome an array of organizational impediments and social obstacles before they can participate and benefit fully”.

Whether or not a conference or a series of conferences serves all these purposes depends on a range of factors, some organisational, some academic, and some social. Analysing them in all detail would be a very difficult task. The structure of participation in a conference is, however, an important indicator. A conference that brings together the same group of people every year will not be able to disseminate knowledge to young professionals. A conference that draws participation mainly from the country where it is held cannot be a major factor in the international exchange of scientific knowledge.

Although the aims of the ERSA conferences are not specified anywhere, from the history of ERSA and our experience as members of various organising bodies we would state them as follows:

1. ERSA conferences aim at representing the entire discipline of regional science. They aim to give an overview of the current state of discussion of regional science issues, particularly in Europe.

2. ERSA conferences aim at the scientific community. They provide an arena for scholarly discussion of regional science issues and for meeting regional scientists from all of Europe and, to a lesser extent, other continents.
3. ERSA conferences want to encourage young researchers in regional science to join the international scientific community and to engage in its discussions. “Young scientist sessions” and the annually awarded “Epainos-prize” are clear indicators of this goal.

Based on these aims we can formulate the following hypotheses about participation in European regional science conferences:

1. In order to be able to represent European regional science, we expect to find participants from all major European countries in every conference. Although we expect to see distance decay in participation (see the next hypothesis), the ranking of countries by number of participants is expected to be similar between conferences. We will test this hypothesis by computing rank correlation coefficients.
2. In order to fulfil their aims, ERSA-conferences will need both a stable set of frequent participants as well as fluctuation. We expect to find a significant number of people participating in three or more of the conferences, as well as a significant number of one-time participants.
3. Since conference attendance costs time and money we expect distance to be an impediment to conference participation. We will explicitly test for the role of distance by modelling conference participation in a binary logit model.

In addition to testing the three hypotheses we will also explore the relation between distance and the frequency of participation. On the one hand, frequent participants may be less sensitive to distance because they may attempt to maintain their networks irrespective of the location of the conference. They may also have more accumulated knowledge of the value of attending ERSA conferences than occasional participants. On the other hand, those who attend only occasionally may do this because the conference is hosted in their hometown or home country. However, occasional participants may also consist of people that come from other continents. If the first group dominates this will lower the average distance travelled, but if the latter dominates average distance will increase. Therefore, the expected relation between the frequency of participation and distance is not clear a priori.

2.1 The dataset

For our empirical analysis we use information about the annual ERSA congress. Since 1996, the organisers of the congresses have published a subset of the papers presented at the conference in electronic form on CD-ROMs. For the congress in

1998, the software and database system *conf-vienna*² has been developed, and it has been used for all subsequent conferences. This gives two potential sources for our analysis. On the one hand the content of the databases of the various conferences, on the other the content of the CD-ROMs. Both sources offer advantages, but they also have disadvantages. The database has the advantage that it provides very detailed information about the various conferences. One can track the submitted abstracts and their authors, which abstracts have been accepted, who have registered for the conference and who have actually participated in the event. However, the various conference organisers used the database in very different ways. Some used it only for abstract submission; others did not register whether a participant actually checked in at the event. Moreover, the databases for the congresses 1999 and 2000 have been deleted from their respective servers and they are thus not available for analysis anymore.

The CD-ROMs have the advantage that they are an official product derived from the conference. They give precise information about the authors, much better than the database, where the authors are typically recorded at the abstract submission stage. However, not all presentations at the conference are actually recorded on the CD-ROM, since the deadline for papers to be included on the CD-ROM is typically a few weeks before the congress and not all papers are available by this date. So, the CD-ROM includes fewer presentations than are usually given at the congress. However, it can also happen that a paper is on the CD-ROM, whereas it has actually been withdrawn from the program in the last moment. Moreover, not all co-authors mentioned on the CD-ROM actually travel to the conference location. However, one can argue that as co-authors they have actively contributed to the material presented and thus to the conference as well.

In our analysis we decided to use the CD-ROMs as our basis of information, because it allows us to look at more conferences than the other information source, and it enables us to identify repeating participations of the same individual. To be able to track participants over the years, we have identified them in the listings of the various congresses based on name, affiliation, address and e-mail address. This had to be done manually, which is obviously a potential source of error. The chance for error is probably higher for participants from some countries than for others. A participant from a country with non-western script may transcribe her name differently from one year to the other and therefore erroneously be treated as different individuals in our analysis. The same problem may occur for a participant from a country with the tradition of complex names, like Spain and The Netherlands. In the latter country names like Van Dijk and De Graaff are not always used in a consistent way. There too, the chance for missing an individual from one year to the other may be higher. All in all the CD-ROMs contain enough useful information for an empirical analysis of conference participation, but one has to be aware of the weaknesses of this dataset and take them into account when interpreting the results.

² See <http://www.wu-wien.ac.at/usr/iir/maier/conf-vienna/conf-vienna.html> for more information on this system.

In order to be able to compute distances between participants and congress locations, we have identified latitude and longitude of the participant's home locations. This has been done by use of the Geographic Names Information System (GNIS; <http://geonames.usgs.gov/>) for locations in the US, and the GEOnet Names Server (GNS; <http://earth-info.nga.mil/gns/html/index.html>) for others.

3 Conference participation

In 2005 the 45th European congress took place in the city of Amsterdam in The Netherlands. When we look at the locations of the 45 ERSAs congresses (see the Appendix, Table A1), we see them in all parts of Europe from North to South and East to West. A wide ring covers Dublin, Stockholm, Moscow, Istanbul and Lisbon. The 45 congresses were hosted by 33 cities in 20 countries. In five countries the congress has been twice; in Austria, Denmark, England, Italy, Hungary and Poland the congress has been three times. Most often it has been hosted by The Netherlands, which in 2005 has organised the congress for the sixth time, followed by Germany with four congresses. Budapest, Krakow and Vienna are the most popular cities with three congresses each, whereas the seven cities Barcelona, Copenhagen, Groningen, London, Rome, The Hague and Zurich hosted the congress twice.

Over the six-year period that we will analyse in more detail, ERSA congresses have been held in very different parts of Europe. The conference locations were:

1998	Vienna, Austria	1999	Dublin, Ireland
2000	Barcelona, Spain	2001	Zagreb, Croatia
2002	Dortmund, Germany	2003	Jyväskylä, Finland

Vienna and Barcelona organised the congress for the third and second time, respectively. The other cities were new locations and, with the exception of Germany, these cities were located in countries that had not hosted the congress before. Besides the geographical location of the congress city factors such as the general conference theme, the plenary speakers, advertising activities, acceptance policy and the format of the conferences may have an effect on the number of participants. In our view, the purpose of the selection of the general conference theme is mainly to show a particular interest of the host city or country, and to attract sponsors. Although each congress adopted a special theme, contributions on other topics were very welcome at each conference and, therefore, we expect that the impact on the attraction of potential participants is very limited. In general the formats of the conferences were very similar. Most conferences lasted four days with the exception of Zagreb and Jyväskylä, which lasted only three days. The conferences started on Tuesday or Wednesday and lasted till Saturday with the exception of Vienna where the conference started on Saturday and lasted until Tuesday. The conferences took place in the last week of August, with the exception of Dublin that took place one week earlier. The format of the conference was very

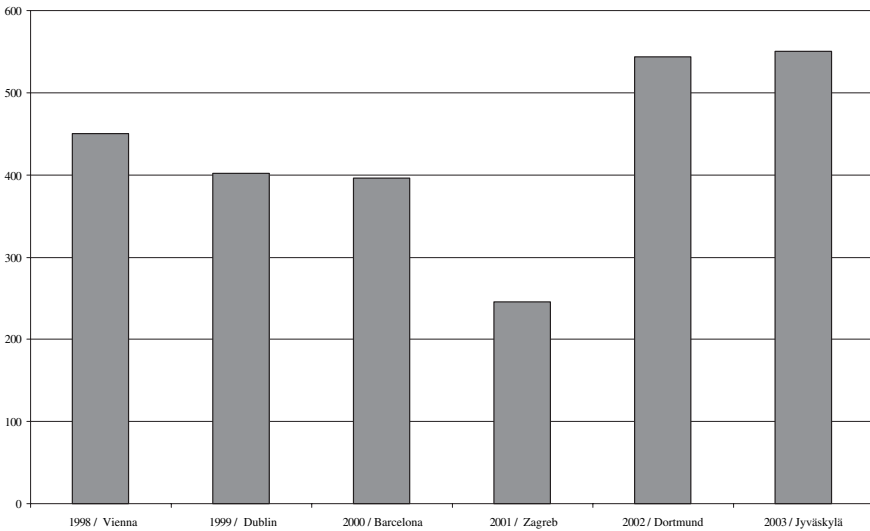


Fig. 1. Number of participations per ERSA congress

much the same with a few plenary sessions and a series of parallel sessions where papers were presented and discussed within 25–30 minutes in sessions of 90–120 minutes. In Jyväskylä R-sessions were introduced for papers that successfully mastered a refereeing process. R-sessions have a formal discussant assignment, and slightly more time is allocated for presentation. The aim of R-sessions is to improve the quality of the papers and to give good papers better exposure. However, like in all other conferences also in Jyväskylä nearly all proposed papers were accepted for presentation. Only the number of presentations per author was restricted, but it is not very likely that this or the introduction of R-sessions had a significant impact on the number of participants. For the congress in Porto (Portugal) in 2004 a more rigorous policy was implemented. Papers that were not sent in time were dropped from the programme. However, the Porto congress is not part of our analysis and thus does not bias our results. Sessions for young scientists who participated in the Epainos Prize contest were organised at all conferences in our analysis. The conference fee for the conferences shows only minor variation around € 250 for a regular participant who is a member of an ERSA section or of RSAI, and who pays before July. The advertising activities for the congresses take place via congress websites that can be reached via the ERSA website www.ersa.org and via the ERSA-sections. In addition, flyers are distributed at other conferences and local organisers try to attract local people. The successfulness of attracting local people may have an effect on the number of participants that varies by country.

In the six conferences under study there were 2,588 participations registered on the CD-ROMs. The 2,588 participations over the six years that we analyse result from 1,830 individuals. So, in average a person has participated in 1.4 congresses. As Fig. 1 shows, participation was lowest in Zagreb, in 2001, and

Table 1. Top 10 countries in terms of participations

Rank	Country	Participations	Percentage
1	Spain	423	16.3
2	The Netherlands	247	9.5
3	United Kingdom	214	8.3
4	Italy	210	8.1
5	Germany	193	7.5
6	Finland	128	5.0
7	USA	103	4.0
8	Austria	100	3.9
9	Turkey	90	3.5
10	Russia	78	3.0

Table 2. Pair wise correlation of ranks of participating countries

City	Dublin	Barcelona	Zagreb	Dortmund	Jyväskylä
Vienna	0.78	0.77	0.53	0.39	0.61
Dublin		0.87	0.46	0.69	0.81
Barcelona			0.42	0.63	0.81
Zagreb				0.43	0.54
Dortmund					0.84

highest in Jyväskylä, in 2003. In 2003 the number of participants was only slightly higher than in 2002 but more than double that of 2001 in Zagreb. The breakdown by country of residence of the participants can be found in the Appendix, Table A2. There seems to be a slight positive time trend in participation at ERSA congresses and it seems that the distance of the congress site to the centre of Europe does not have a strong impact on the number of participations. Whether this is indeed the case, will be analysed later.

In Table 1 we list the ten countries with the highest number of participations at the six congresses. The same list for each conference can be found in the Appendix, Table A3. We see that Spain is by far the most active country in terms of participation. Over 16 percent of all participations are from this country. The Netherlands follows in second place with 9.5 percent. Next come the United Kingdom and Italy. In hypothesis 1 we have argued that the rankings by country should be similar between conferences. We test this hypothesis by calculating Spearman's rank correlations between pairs of conferences. The respective results are given in Table 2. In general, the correlation coefficients are quite high. Only for four of the 15 relations we get rank correlation coefficients below 0.5; the same number of relations result in values exceeding 0.8. The lower values always involve either Zagreb or Dortmund. In both conferences the highest number of participants was not from Spain as in all other conferences. Furthermore, several unusual countries appear among the top 10 countries as can be seen from Table A3

Table 3. Top 10 countries, participants versus participations

Country, incl. all	Participants (1)	Participations (2)	Index of participation (2)/(1)
Austria	62	100	1.61
The Netherlands	154	247	1.60
Finland	80	128	1.60
Russia	51	78	1.53
Switzerland	40	61	1.53
Sweden	51	76	1.49
United Kingdom	144	214	1.49
Italy	143	210	1.47
<i>All countries</i>	1830	2588	1.41
Spain	304	423	1.39
Portugal	54	71	1.31
Turkey	69	90	1.30
USA	81	103	1.27
Germany	155	193	1.25

in the Appendix. The relations Vienna-Dortmund, Barcelona-Zagreb, and Zagreb-Dortmund are significant at the 5 percent-level, all other at the 1 percent-level. These results support our hypothesis 1.

3.1 Conference participants

When we aggregate over the conferences, we have to distinguish between participations and participants. A number of 60 participations from a certain country may result from 60 individuals each participating in only one of the conferences, or in 10 persons participating in all six. The 2,588 participations over the six years that we analyse result from 1,830 individuals. So, in average a person has participated in 1.4 congresses. We call this measure “index of participation”. When we calculate this index by country of residence of the participants, we see marked differences. On the one hand, there are two countries with an index value of three (Bosnia and Herzegovina, New Zealand), on the other hand, 18 countries reach an index value of one, in most cases resulting from just one participation over the six year period. These extreme values are typically the result of very small numbers of participations from these countries.

More interesting are the countries with larger numbers of participations. Table 3 shows the number of participants, number of participations, and the index of participation for the countries with 60 or more participations between 1998 and 2003. The table is ordered by the index of participation. Countries at the top end of the table contribute more to the stable core of the conferences, whereas countries at the lower end bring in more occasional participants. We see that the representation of countries such as Austria, The Netherlands, and Finland at ERSAs congresses results from a substantial number of individuals visiting the congresses repeatedly. A comparable level of representation from countries such as Germany,

Table 4. Top 10 countries in terms of participants

Rank	Rank in Table 1	Country	Participants	Percentage
1	1	Spain	304	16.6
2	5	Germany	155	8.5
3	2	The Netherlands	154	8.4
4	3	United Kingdom	144	7.9
5	4	Italy	143	7.8
6	7	USA	81	4.4
7	6	Finland	80	4.4
8	9	Turkey	69	3.8
9	8	Austria	62	3.4
10	–	Portugal	54	3.0

the US, and Turkey, on the contrary is spread out over a larger number of individuals. From these countries, different people visit ERSA congresses over time.

The difference between participations and participants leads only to a slightly different top 10 (see Table 4) list of participant by country than shown in Table 1 for participation. Most notable is that Germany moves from place 5 to 2 indicating that German participants do not attend the congress very frequently, as can also be seen from the low value of the index of participation for Germany (see Table 3). In part this results from the large German participation at the Dortmund conference.

3.2 *The role of distance*

In hypothesis 3 we have raised the question whether distance matters in the participation in ERSA conferences. Since the conference location changes from year to year, this is an important question. On the one hand it is important for ERSA because it may affect to what extent its congresses are able to fulfil the role as mediator of scientific exchange and discussion in regional science in Europe. On the other hand, it is also an important question for the conference organisers, because it reveals how sensitive participation is, and to what extent participants will come almost automatically to maintain their scientific network or that they will have to attract new participants to their congress.

A first approach to the question of distance sensitivity is to look at the home country of participants (see Table A3 in the Appendix). As it turns out, in four of the six congresses (Vienna, Dublin, Barcelona, and Jyväskylä) the largest number of participants came from Spain. In Zagreb the largest participation was from Italy, in Dortmund from Germany. So, only for two of the congresses the largest participation was from the country where the congress was hosted. Among them is Barcelona with over 34 percent participants from Spain and about 9 percent directly from Barcelona (see Fig. 2). The bars (left hand scale) in Fig. 2 show the average distance participants had to travel in order to get to the respective congress locations. The solid line (right hand scale) shows the percentage of participants

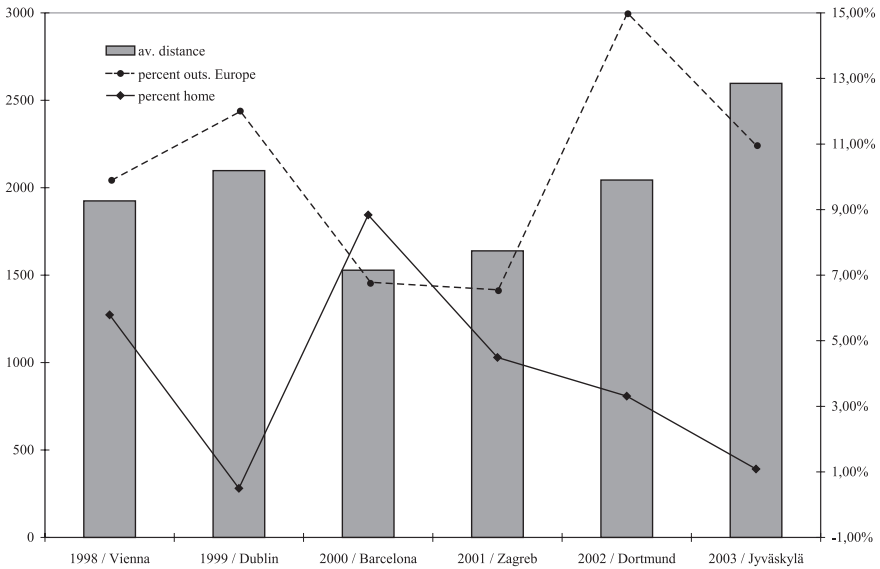


Fig. 2. Average distance of participations (in km), and participations from outside Europe and from the congress city location (in %) per ERSA congress

whose home location is identical with the congress city, and the dotted line (right hand scale) corresponds to the share of participants from outside Europe.

This high percentage of participants from the conference city in Barcelona also shows up when we compute the average distance that participants of the various conferences have travelled. As we see from Fig. 2 this number is the lowest for the Barcelona congress and the largest for the one in Jyväskylä. When we calculate the share from the host country instead of the host city or the share from the organizing ERSA-section (that might consist of more countries), by and large the same pattern arises. Overall there is some evidence that in large countries like Spain and Germany the share of participations from the host country is rather large when they organise the congress. Another factor that influences the average distance is the share of participants from outside Europe. On average this is 11 percent,³ but in Barcelona and Zagreb their share was only 6–7 percent. In Dortmund the share from outside Europe was very high with over 15 percent, mainly from the US and Japan. It is clear that the average distance increases with the share of participants from outside Europe. It is also clear that when the congress is hosted by peripheral cities in Europe like Dublin and Jyväskylä the average distance must be higher.

It is obvious from our analysis of participants and participations that different groups of researchers meet at ERSA congresses. Some of them are regular participants attending (almost) every year. Others attend for the first time and maybe only one time. The relative size of these groups, of course, has a strong impact on

³ Participants from outside Europe mainly come from the US (37%), Japan (21%), Israel (12%), Brazil (11%) and Australia (7%), leaving only 13% for other countries outside Europe.

Table 5. Share of participations by frequency of attendance per person

Participations	Persons	Percentage
Once	1384	75.6
Twice	260	14.2
3 Times	112	6.1
4 Times	36	2.0
5 Times	24	1.3
6 Times	14	0.8
Total	1830	100

Table 6. Share of participations by frequency of attendance per conference, with percentages in parentheses

Year	Once	Twice	3 Times	4 Times	5 Times	6 Times	Previous
1998	254 (57)	85 (19)	55 (12)	23 (5)	19 (4)	14 (3)	—
1999	216 (54)	73 (18)	51 (13)	27 (7)	21 (5)	14 (3)	102 (25)
2000	189 (48)	83 (21)	64 (16)	26 (7)	20 (5)	14 (4)	97 (24)
2001	113 (46)	40 (16)	39 (16)	23 (9)	16 (7)	14 (6)	60 (24)
2002	290 (53)	126 (23)	67 (12)	24 (4)	23 (4)	14 (3)	79 (14)
2003	322 (58)	113 (21)	60 (11)	21 (4)	21 (4)	14 (3)	160 (29)

distance sensitivity. Regular participants will probably attend the ERSA congresses irrespective of the location and, therefore, be much less distance sensitive than occasional attendants. From Table 5 we can learn that over the six conferences 75 percent of the participants have participated in only one event. Just 14 persons (0.8 percent of all participants) have attended all six congresses.

In Table 6 we group all participants by the frequency of participation for each individual congress separately. On average about half of the participants in a congress are one-timers. The share of those participants who have participated in at least half of the six conferences is between 21 percent for Jyväskylä (2003) and 38 percent for Zagreb (2001). This is a fairly sizeable stable core of 100–120 participants, particularly when we take into account that because of the way we measure participation, the results may be biased toward occasional participations. Although we do not have a precise indicator, these results seem to support our second hypothesis.

Over the years we see interesting differences. The low level of attendance at the Zagreb conference in 2001, for example, can mainly be attributed to underrepresentation of occasional participants. The percentage of participants who attended one or two congresses was the lowest of all years for Zagreb. The small number of attendants in Zagreb is also the reason why the share of participants in Dortmund who also attended the previous congress is extremely low.

By means of Table 7 we try to shed more light on the role of distance (hypothesis 3) and on the relation between the frequency of attendance and the

Table 7. Frequency of attendance by distance

Distance	Once	Twice	3 Times	4 Times	5 Times	6 Times
0–99 km	79	13	12	6	3	3
100–999 km	450	164	100	37	36	28
1,000–1,999 km	443	194	138	69	63	47
2,000–2,999 km	188	68	48	24	17	9
3,000–3,999 km	58	25	10	4	1	3
4,000–4,999 km	10	2	1	0	0	0
5,000–5,999 km	9	4	2	1	0	0
6,000–6,999 km	21	6	3	3	0	0
7,000–7,999 km	37	12	3	4	0	0
8,000–8,999 km	27	6	1	0	0	0
9,000–10,000 km	35	17	11	0	0	0
>10,000 km	24	5	7	0	0	0
Total	1381	516	336	148	120	90
Average	2143	2078	2098	1695	1308	1316
Maximum	17176	16114	18695	7266	3123	3101
Standard deviation	2684	2440	2839	1438	695	707

distance travelled. It is obvious that the numbers in the upper part of Table 7⁴ are much larger than in the lower parts and this confirms the expected distance decay of hypothesis 3. The relation between distance and frequency of attendance is much more complicated. The average distance for those who attended 1–3 times is about 2,000 km and does not differ very much. Those who attend 4 times travel on average 1,700 kilometre and those who attend 5–6 times 1,300 kilometres. The standard deviation of the average distance goes down in a similar way as the average distance when the frequency of attending increases. These statistics suggest that the distance decay decreases if the frequency of participation increases. From the maximum distance travelled it is clear that those who come from very far away do not attend more than three out of the six conferences. Those who attend five or six times do not travel more than 3,000 km and they thus are located in Europe. For each frequency category about one-third comes from less than 1,000 kilometres from the host city. This share is somewhat higher (38 percent) for those who attended only once, and slightly lower (29 percent) for those who attended four times. The high share for one-time participants is mainly due to the high share (6 percent) from close by (<100 km) to the host city. For those who attended 2–6 times the distribution is rather similar, although the numbers from those who travelled more than 3,000 kilometre is smaller for more frequent attendants. The number of participants who come from a distance between 1,000 and 2,000 kilometres is for those who attended 2–5 times always higher than the number living less than 1,000 kilometres from the host city. For those who attended only once this picture is different. The number of participants

⁴ Note that we split the numbers of who travelled less than 1,000 kilometres in 0–99 and 100–999 in order to attain more precise insight in the participants from very close to the host city.

from less than 1,000 kilometres from the host city shows the highest number in this category. But besides a high number from close by among the one-timers, also the numbers who travelled more than 5,000 kilometres and thus came from another continent are much higher among this group. So, for the one-timers there appear to be two compensating effects with regard to distance sensitivity. On the one hand the number of participants from less than 1,000 kilometres and especially from less than 100 kilometres from the host city is larger and this reduces the average distance, but on the other hand also the number of participants from other continents is substantially higher and this increases the average distance.

The results in Table 7 shed light on the relation between distance and the frequency of participation. We expected on the that frequent participants may be less sensitive to distance and thus should travel on average longer distances because they may attempt to maintain their networks irrespective of the location of the conference. Alternatively, there is the effect of attracting extra participants who live close to or in the host city by an active Local Organising Committee, and the counteracting effect of occasional participants from other continents. It is obvious from Table 7 that non-European participants participate occasionally (because of distance), and therefore do not fall into the categories of 4, 5, and 6-time participants. This inflates the average distances of occasional participants and by far dominates the effect of a larger share of participants living close to the host city. When we calculate the average distance for each frequency category for Europeans only, the average distance for all categories is about 1,300 kilometres.

We can draw two preliminary conclusions from this analysis. First, there is obviously a difference between occasional and frequent attendants; and second, it is not only distance from the locational centre of regional scientists in Europe that determines attendance, but also some difference in the attractiveness of the conference location or the organisational characteristics of the conference.

We now test the hypothesis about the conference location as well as hypothesis 3 about the distance decay and the earlier one of a positive time trend by estimating a logit model of conference participation. We use all the persons in our dataset as the sample and specify a binary logit model of participation in a conference. When the person attends, the dependent variable is one, otherwise it is zero. So, we have 10,980 (6 congresses times 1,830 participants) observations in the model. We use four sets of explanatory variables:

1. an alternative specific constant (C);
2. four conference dummies (C99, C00, C01, C02) for the congresses of 1999 to 2002. We can use only four such dummies because we have to avoid perfect collinearity with the alternative specific constant and with the time variable; the conference dummies control for differences in locational characteristics, but also for differences with regard to the format of the congress, advertising activities and other types of organisational changes;
3. a time variable (TIME) which is zero for 1998, one for 1999, and so on; and
4. DIST is the distance in kilometres between the participant's work location and the location of the conference.

Table 8a. Estimation results for different conferences

	1998	1999	2000	2001	2002	2003
C	-1.07 (-15.46)	-1.18 (-15.22)	-0.94 (-11.76)	-1.68 (-18.52)	-0.91 (-14.38)	-0.75 (-9.45)
DIST	-0.03 (-1.22)	-0.04 (-1.68)	-0.18 (-5.34)	-0.10 (-2.86)	0.025 (1.35)	-0.04 (-1.53)
Correlation ρ^2	0.19	0.24	0.26	0.43	0.12	0.12

Table 8b. Estimation results pooling data for different conferences

	Model 1	Model 2	Model 3	Model 4
C	-1.27 (-28.29)	-1.03 (-18.03)	-1.03 (-18.33)	-1.19 (-26.57)
C99	-	-0.20 (-2.81)	-0.20 (-2.88)	-
C00	-	-0.28 (-4.11)	-0.28 (-4.29)	-
C01	-	-0.93 (-11.87)	-0.93 (-12.43)	-0.85 (-11.68)
C02	-	0.01 (0.12)	-	-
TIME	0.07 (5.40)	0.06 (4.17)	0.0630 (4.42)	0.09 (6.77)
DIST	-0.04 (-4.30)	-0.04 (-4.53)	-0.04 (-4.56)	-0.04 (-4.64)
Correlation ρ^2	0.21	0.23	0.23	0.23

Table 8a shows the results of the estimation for each congress separately. In this step we can use only an alternative specific constant (C) and distance (DIST) as variables. Numbers in parentheses are *t*-values. We see that the distance effect is negative for all locations, but only statistically significant at the 1 percent level in two of the six estimations. The alternative specific constant is always significantly negative. Their relative size reflects the number of participants at the respective congress. As we can see from the corrected ρ^2 , the quality of the model is not very good, particularly in those cases where the distance parameter is insignificant.

Table 8b gives the results of the estimation of four specifications of the model on the full dataset of all congresses together. Model 1 is the same model as in the upper part of the table,⁵ but now for the full sample. It shows that when all observations are pooled we find a significantly negative effect of distance, whereas this was only found for two of the six models for the individual congresses. A possible explanation is that the number of observations in the pooled model is

⁵ The variable TIME is constant when the model is estimated only for one conference. Therefore, its coefficient cannot be identified.

larger and, furthermore, the effect of a high share of participants from the host country becomes less prominent. When we use the full dataset it allows for different combinations of the above-mentioned hypotheses. The time variable is significantly positive in all model variants. When we include the conference location dummies in models 2–4, the significance of the time variable declines only slightly. The estimation demonstrates a positive time trend in the number of participants in ERSA congresses.

In models 2–4 we test the relative attractiveness of the congress locations and the organisational setting with a set of city dummies. As we see from model 2 in Table 8b, the coefficients of all but one variable are significant. The one exception is C02, the dummy for the 2002 conference (Dortmund). This means that the attractiveness of Dortmund as a location of ERSA congresses and the congress format is within the norm that was set by Vienna and Jyväskylä as well as concurrent with the time trend. When Dortmund is added to the baseline cities in model three the results for the other variables hardly change. Therefore, we can conclude that the negative coefficients of the conference dummies for Dublin (C99), Barcelona (C00), and Zagreb (C01) show that these cities and the congress formats were less attractive as congress locations than the baseline cities Vienna, Jyväskylä and Dortmund.⁶ The relatively low level of attendance in Zagreb shows up clearly in the parameter values of its conference dummy. In all model versions the negative coefficient for C01 is more than three times that of C99 or C00. The value of the Zagreb coefficient decreases only slightly when in model 4 Dublin and Barcelona are also added to the baseline, but in that case the value of the coefficient for the time trend increases slightly. It picks up the differences in attractiveness and formats between conference locations early and late in our observation period.

In all four models discussed until now, the results support the hypothesis that participation in ERSA congresses is sensitive to distance. The parameter of DIST is significantly negative in all estimations. As a next step one may want to test whether frequent participants are as distance sensitive as occasional ones. Unfortunately, our data do not permit such a test. For this test we would need to divide the sample by frequency of participation. Since participation is our dependent variable, this would introduce a severe endogeneity bias that invalidates the results.

From the regression results we may conclude that the hypothesis of a negative distance decay is confirmed. As mentioned before, the average travel distance is heavily influenced by the number of participants from outside Europe. Therefore, we estimated the models 1–4 also on a dataset with only European participants. The results were very similar to the results presented in Table 8b, and we may therefore conclude that the negative distance decay we found is a robust result and not caused by participants from outside Europe. Although there is a positive time trend in the number of participants, it is clear that also the attractiveness of

⁶ Dortmund in particular attracted a high number of participants from outside Europe (15%). When we estimate model 2 for European participants only, the dummy for C02 for Dortmund becomes negative in the same range as Barcelona and Dublin and differs significantly from the baseline cities Vienna and Jyväskylä.

particular cities and/or the congress format has an impact on the number of participants in a congress. Because the congress formats are in our view very similar, we tend to conclude that the attractiveness of cities is of more importance than the organisational format of the congress. But this is not a straightforward conclusion of our statistical analysis. It is mainly based on our personal experience as participants in all the six conferences.

4 Summary and conclusions

During the last half century regional science has emerged from a new field to a well-known discipline with numerous scientific journals and scientists in all parts of the world. The annual congresses of the European Regional Science Association (ERSA) are the single most important regional science activity in Europe. Therefore, the CD-ROMs with information about the six ERSA conferences over the period 1998–2003 are useful sources of information to analyse the role of conferences as a way to join, create and/or maintain a network in regional science in Europe for both the individual scientist and for the European Regional Science Association (ERSA). This is of interest from both an academic and an organisational point of view. The academic question deals with insight in the spatial aspects of the creation and diffusion of knowledge in regional science. The organisational dimension is relevant for the selection of future congress sites by the ERSA Council and may reduce uncertainty for potential organisers in terms of the expected number of participants.

We have used the information on the CD-ROMs to analyse the determinants of participation in six ERSA conferences. Spain is by far the country where most (16 percent) participants come from. Germany, Italy, the United Kingdom and The Netherlands form a group of four countries that each contribute between 8–10 percent of the participants. Finland, Turkey and Austria are the home country for between 3–5 percent of the participants and this is also the share of participants that comes from the United States. The countries mentioned until now contribute two-thirds of the participants, implying that about one-third comes from 43 other countries of which 16 are located outside Europe. Participants from outside Europe account for 11 percent of the total number of participants. Although there are clearly spatial concentrations in the origin of the participants, many European countries take part in the ERSA-meetings and there is also substantial interaction with participants from other continents. The ranking of countries by number of participants does not differ significantly between the conferences and this confirms our first hypothesis.

Another issue that we addressed is the distance sensitivity of conference participation. A substantial part of the participants comes from the country hosting the conference. Usually this share is between 5–15 percent with the exception of Barcelona where one-third of the participants were from Spain. However, when we take into account that on average across all congresses 15 percent of the participants come from Spain, we can conclude that even if we include the Barcelona congress, conferences are not dominated by participants from the host country.

The share of participants who have participated in at least three out of six conferences is between 21 percent for Jyväskylä (2003) and 38 percent for Zagreb (2001). This implies that there is a stable of core of 100–120 participants that attend regularly, and who form the heart of the regional science network in Europe. This is in accordance with our second hypothesis.

The average distance travelled for all participants is just over 2,000 km. The average travel distance for those who participate three times or less is significantly higher than for those who attend more than three times. Those who attended five of the six conferences travel on average 1,300 kilometres. However, when we leave out the participants from outside Europe the average distance travelled becomes 1,300 irrespective of the frequency of attendance. So, the higher average distance for less frequent participants is due to occasional participants from outside Europe. When we apply logit regression analysis we find a significantly negative effect of distance, implying that participants are less likely to go to conferences far away. This negative effect remains the same if the model is estimated without participants from outside Europe and, we can therefore conclude that also our third hypothesis is confirmed by the empirical results. For the governing bodies of ERSA this does not necessarily imply that the conference should always be organised in a central location in Europe to maximise the number of participants. Since a core group of regular participants will show up irrespective of the location, a policy of organising the conference in a wide spread of cities over Europe may be an effective strategy to attract new participants. Local organisers should concentrate their efforts on recruiting new participants to the ERSA conferences from their host country and/or neighbouring countries. The governing bodies of ERSA should spend some thoughts on how to better integrate occasional participants into the networks of ERSA in order to turn a higher proportion of the participants into frequent attendees. For the conferences we analysed in this study it seems that the geographical characteristics of the conference location are more important for the decision to participate than differences in the organisational aspects or the format of the conference. This may partly be due to the fact that the variation in the latter was very small in the six years we analysed. It is worthwhile to explore if other formats that deviate more substantially from the current form are associated with more participants by comparing, for instance, conference formats that are applied by other scientific organisations hosting annual conferences. Another option is that ERSA does not strive to a continuously increasing number of participants at the annual conference, but has as a goal to increase the quality standard of the papers presented and of the participants that are allowed to present. This implies a policy choice, because there is an obvious contradiction between an increase in quality as a goal and a goal of enlarging the ERSA network and maximising the dissemination of the body of knowledge in regional science among as many countries and individuals as possible.

The evidence we have collected in this article seems to indicate that the ERSA conferences serve the goals that we have formulated at the outset of the article. We have found support for our three hypotheses and gained more insight in counteracting forces with regard to the relation between distance and the frequency of

attendance. Based on the origin of the conference participants we see that regional science is spread out over Europe to almost all countries and to all continents. The correlation in the composition of participants by country indicates fairly high stability despite a high share of one-time participants and shows that ERSAs conferences are an important opportunity for interaction among European regional scientists as well as with colleagues from other continents who participate in substantial numbers.

Obviously, looking merely at conference participation gives a very restrictive impression of the interaction at conferences. It would be interesting for future research to analyse more in depth the way in which personal contacts influence the forming of other types of networks and cooperation, for instance, by means of an analysis of co-authorship. For instance, the role of language barriers and the transfer of knowledge between generations by co-authors that differ in age and location can lead to more insight in the role of networks, clusters and conferences on the diffusion and production of regional science as well as on the tendency of cooperation between scientists working at different locations.

Appendix

Table A1. Conference locations of the ERSAs congresses

Year	City	Country	Year	City	Country
1961	The Hague	Netherlands	1984	Milan	Italy
1962	Zurich	Switzerland	1985	Budapest	Hungary
1963	Lund	Sweden	1986	Krakow	Poland
1964	Ghent	Belgium	1987	Athens	Greece
1965	Krakow	Poland	1988	Stockholm	Sweden
1966	Vienna	Austria	1989	Cambridge	UK
1967	The Hague	Netherlands	1990	Lisbon	Portugal
1968	Budapest	Hungary	1991	Istanbul	Turkey
1969	Copenhagen	Denmark	1992	Louvain la Neuve	Belgium
1970	London	UK	1993	Moscow	Russia
1971	Rome	Italy	1994	Groningen	Netherlands
1972	Rotterdam	Netherlands	1995	Odense	Denmark
1973	Vienna	Austria	1996	Zurich	Switzerland
1974	Karlsruhe	Germany	1997	Rome	Italy
1975	Budapest	Hungary	1998	Vienna	Austria
1976	Copenhagen	Denmark	1999	Dublin	Ireland
1977	Krakow	Poland	2000	Barcelona	Spain
1978	Fribourg	Germany	2001	Zagreb	Croatia
1979	London	UK	2002	Dortmund	Germany
1980	Munich	Germany	2003	Jyväskylä	Finland
1981	Barcelona	Spain	2004	Porto	Portugal
1982	Groningen	Netherlands	2005	Amsterdam	Netherlands
1983	Poitiers	France			

Table A2. Participation by country

	1998	1999	2000	2001	2002	2003
	Vienna	Dublin	Barcelona	Zagreb	Dortmund	Jyväskylä
Albania	0	0	0	0	1	0
Argentina	0	0	2	0	0	0
Australia	7	0	4	0	4	5
Austria	36	16	17	9	14	8
Belarus	0	0	0	0	1	0
Belgium	11	9	10	2	2	14
Bosnia and Herzegovina	0	2	2	3	3	2
Brazil	1	6	2	5	8	8
Canada	0	2	1	0	3	1
Chile	0	0	0	0	1	0
China	1	0	0	0	0	4
Croatia	11	4	4	14	8	11
Czech Republic	1	0	0	0	0	0
Denmark	11	11	4	7	4	4
Egypt	0	0	0	0	0	1
Estonia	0	1	1	18	6	5
Finland	10	19	12	10	30	47
France	8	10	12	4	5	14
FYR of Macedonia	0	0	0	1	0	0
Germany	23	12	15	13	84	46
Greece	4	5	8	1	15	17
Hungary	0	1	2	2	1	0
India	1	0	0	0	0	0
Indonesia	0	0	0	0	1	0
Ireland	3	5	1	0	0	5
Israel	3	8	5	1	10	5
Italy	36	25	26	28	35	60
Japan	1	11	0	4	24	17
Latvia	0	0	0	0	4	2
Lithuania	0	3	0	0	0	0
Luxembourg	0	0	0	0	0	1
Mexico	0	0	0	0	2	0
Morocco	2	0	0	0	0	0
New Zealand	1	1	0	0	0	1
Norway	4	9	7	6	4	8
Poland	2	2	0	2	12	3
Portugal	9	12	12	18	3	17
Romania	1	1	3	2	4	3
Russia	25	17	4	4	16	12
Slovakia	5	1	3	0	2	2
Slovenia	0	0	0	1	1	2
South Africa	0	0	0	0	2	1
South Korea	2	1	0	0	3	1
Spain	81	57	136	20	62	67
Sweden	6	12	9	13	18	18
Switzerland	13	7	9	0	18	14
Taiwan	0	1	0	0	0	0
The Netherlands	33	39	33	27	58	57
Turkey	25	18	19	7	8	13

Table A2. Continued

	1998 Vienna	1999 Dublin	2000 Barcelona	2001 Zagreb	2002 Dortmund	2003 Jyväskylä
Ukraine	8	0	0	0	0	0
United Kingdom	38	57	21	18	42	38
USA	27	17	12	5	25	17
Total	450	402	396	245	544	551
From outside Europe	46	47	26	15	83	61
From outside Europe in %	10.2	11.7	6.6	6.1	15.3	11.1

Table A3. Top 10 countries according to participations, in percents

Conference/city	Country of origin	Participations	Conference/city	Participations
<i>1998/Vienna</i>			<i>1999/Dublin</i>	
Spain		18.0	Spain	14.2
United Kingdom		8.4	United Kingdom	14.2
Austria		8.0	The Netherlands	9.7
Italy		8.0	Italy	6.2
The Netherlands		7.3	Finland	4.7
USA		6.0	Turkey	4.5
Russia		5.6	Russia	4.2
Turkey		5.6	USA	4.2
Germany		5.1	Austria	4.0
Switzerland		2.9	Germany	3.0
<i>2000/Barcelona</i>			<i>2001/Zagreb</i>	
Spain		34.3	Italy	11.4
The Netherlands		8.3	The Netherlands	11.0
Italy		6.6	Spain	8.2
United Kingdom		5.3	Estonia	7.4
Turkey		4.8	Portugal	7.4
Austria		4.3	United Kingdom	7.4
Germany		3.8	Croatia	5.7
Finland		3.0	Germany	5.3
France		3.0	Sweden	5.3
Portugal		3.0	Finland	4.1
<i>2002/Dortmund</i>			<i>2003/Jyväskylä</i>	
Germany		15.4	Spain	12.2
Spain		11.4	Italy	10.9
The Netherlands		10.7	The Netherlands	10.3
United Kingdom		7.7	Finland	8.5
Italy		6.4	Germany	8.4
Finland		5.5	United Kingdom	6.9
USA		4.6	Sweden	3.3
Japan		4.4	Greece	3.1
Sweden		3.3	Japan	3.1
Switzerland		3.3	Portugal	3.1

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