INTERNATIONAL SCIENTIFIC COOPERATION: THE CASE OF THE ECONOMIC AND SOCIAL DEVELOPMENT (ESD) CONFERENCE

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Citation

Abstract
The article analyses scientific conferences as an instrument of international cooperation. The aim is to identify the characteristics and factors influencing the growth of the international scientific conferences. Specifically, it presents the concept and model of the Economic and Social Development (ESD) conference and examines scientific cooperation within this conference between 2012 and 2022. The article draws on data sourced from the ESD conference organiser and the Web of Science database. Between 2012 and 2022, a total of 92 conferences were held across six continents in 26 countries. The WoS database indexed 1,465 articles authored by individuals from 91 countries. The lengthy waiting times for conferences to be indexed in the WoS database have led organisers to seek out additional benefits for participants.

Key words
international, scientific, cooperation, economic, conference, indexation.

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1. Introduction

The term ‘cooperation’ is widely used in both academic literature and everyday language (Tyler, 2011; Tuomela, 2000). It has a number of synonyms. Concepts like ‘exchange’, ‘collusion’, ‘collaboration’, ‘compromise’, ‘cooperation’, ‘altruism’, or ‘win-win dynamics’ are used interchangeably (de Paolo, 2015). In broad terms, cooperation may be understood as a transfer of benefits from one party to another, ultimately resulting in direct or indirect benefits to both parties (Robinson, Barker, 2017). S.F. Cittolin (2018) emphasises that cooperation is an ambiguous term whose meaning depends on the context used. The term can be used in the following aspects:

1. in sociological terms, as a form of interaction in which individuals strive to achieve a collective and common goal thus being essential in the constitution of most social groups;
2. in economic terms, as a cultural construction that is based on social interaction, where goals are common, actions are shared and benefits distributed with balance throughout the system;
3. in ecological terms, as an association between individuals of different species in which both benefit;
4. in political science terms, as the creation of mechanisms and the establishment of solidarity bonds, “a common work, collaboration and development aid” to compensate for differences
between developed and developing countries;
5. in administrative terms, it is a relationship that occurs on a horizontal level with similar or different motivations between the partners and that generates mutual benefits;
6. in educational terms, as an activity of individuals working together to achieve shared goals, to leverage each other’s and their own learning, seeking results that are beneficial to themselves and to all others.

Cooperation is therefore a form of activity that is intended to benefit the cooperating entity. It should be noted, however, that there are a number of reasons for these actors to cooperate. The most important motivators for cooperation include (Khamis et al., 2006) achievement of individual or common goals, task allocation, labour division, conflict avoidance, maintaining system functionality, collective decision making, and knowledge sharing.

Cooperation is a multidimensional phenomenon that can be interpreted in terms of subjects, themes and territory (Studzieniecki, Łuczak, 2020). Subjects of cooperation can be individuals and organisations (Krupski, 2004). In terms of the theme, cooperation can practically concern all forms of human activity. In order to conceptualise particular activities, the International Standard Industrial Classification of All Economic Activities (2008) was introduced.

Its main purpose is to provide a set of categories of activity that can be utilised for the collection and reporting of statistics according to such activities. It is divided into 22 sections covering aggregate categories (e.g. agriculture, construction, transport, education, etc.).

Sections are divided into groups, classes and subclasses. The education section has been developed according to the guidelines of the sectoral classification that is the International Standard Classification of Education (1997).

Scientific cooperation covers a range of disciplines and sub-disciplines. The two levels of Field of Science And Technology (FOS) classification are presented in Table 1.

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<tr>
<th>No</th>
<th>Level I</th>
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<tbody>
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<td>1</td>
<td>Natural Sciences</td>
<td>Mathematics; Computer and information sciences; Physical sciences; Chemical sciences; Earth and related environmental sciences; Biological sciences; Other natural sciences</td>
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<tr>
<td>2</td>
<td>Engineering and Technology</td>
<td>Civil engineering; Electrical engineering, electronic engineering, information engineering; Mechanical engineering; Chemical engineering; Materials engineering; Medical engineering; Environmental engineering; Environmental biotechnology; Industrial Biotechnology; Nano-technology; Other engineering and technologies</td>
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<td>3</td>
<td>Medical and Health</td>
<td>Basic medicine; Clinical medicine; Health sciences; Health biotechnology; Other medical sciences</td>
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<td>4</td>
<td>Agricultural Sciences</td>
<td>Agriculture, forestry, and fisheries; Animal and dairy science; Veterinary science; Agricultural biotechnology; Other agricultural sciences</td>
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<tr>
<td>5</td>
<td>Social Sciences</td>
<td>Psychology; Economics and business; Educational sciences; Sociology; Law; Political Science; Social and economic geography; Media and communications; Other social sciences</td>
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<tr>
<td>6</td>
<td>Humanities</td>
<td>History and archaeology; Languages and literature; Philosophy, ethics and religion; Art (arts, history of arts, performing arts, music); Other humanities</td>
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</tbody>
</table>

Source: Field of Science And Technology (FOS) Classification, 2007.

Different levels of cooperation can be distinguished spatially, including sub-national (local, regional), national, and international levels. International cooperation can have a regional dimension when participants come from a few or several neighbouring countries, or a global dimension when participants come from many countries on several continents (Zartman, Touval, 2010).

2. The international conference as an instrument of scientific cooperation

The most important goal of every scientist’s activity is not only to conduct research, but also to introduce the resulting concepts and methodological solutions into the international information flow so that others
have an opportunity to become familiar with them. This introduction is primarily done by disseminating the results, i.e. presenting them in scientific journals or monographs, or presenting them at international conferences (Drabek, 2018).

International conferences are considered a form of the ‘meetings industry’ (Borodako et al., 2011). The acronym MICE is sometimes used as a synonym for the ‘meetings industry’. The acronym is a combination of the first letters of the English words Meetings, Incentive, Conventions, Exhibitions. Meetings can be held for various purposes, such as communication, information, exchange of ideas, teaching, training or celebration (Can, Terziev, 2018). They can be organised on a commercial or non-commercial basis (Davidson, 1994).

Basic meeting events include conferences, congresses, seminars, forums, symposia, seminars and workshops. Conferences are meetings of representatives of a particular industry sector or scientific discipline organised to present and discuss key issues. However, several conferences have an interdisciplinary character. They are usually organised under a specific theme on a particular issue and therefore bring together professionals from a particular field or people with a clear interest in a particular issue. This type of meetings need not be held regularly, although it is common for them to have a specific periodicity. Conferences with more than 200 participants are sometimes called congresses. Conferences usually last from 1 to 3 days.

Seminars, on the other hand, are designed for smaller groups of participants (from 10 to 50 people). They allow the moderator and participants to engage in discussion to exchange views and experiences. Forums have a different format. These meetings are characterised by an exchange of views. They are usually chaired by panellists or a moderator. Symposia are similar to forums, but tend to be more formal. They usually involve groups of experts who specialise in a particular field of knowledge. During a symposium, the latest research (e.g. in medicine) is often presented. Training sessions, on the other hand, are meetings designed to impart knowledge or skills or to improve the participants’ qualifications. Workshops are similar. They emphasise involvement of participants who are trained to become proficient in a particular skill.

Conferences can be divided into national and international conferences according to their territorial coverage and national structure of attendees (Rivlin, 1995). The status of a conference can be of major importance to scientists. Participation in international conferences may provide greater benefits than participation in national conferences. According to E. Kulczycki (2011), a national conference is one in which representatives from at least five scientific units participate. An international conference, on the other hand, is one in which at least 33% of active participants represent foreign scientific centres. Occasionally, especially among lawyers and political scientists, the term ‘international conference’ exclusively applies to conferences organised by international bodies, namely states and international organisations (Sozański, 2016). However, this interpretation does not apply to international scientific conferences. In these conferences, the organisers are mainly academic centres and scientific organisations which usually have the status of a non-governmental organisation. S. Fraser and D. Manci (2023) distinguish five main types of conference (Tab. 2).

According to K. Sadowska-Cioch (2023), the organisation of scientific conferences is a challenge at a time when more and more large and small scientific meetings are appearing, and potential participants value their time very much and carefully evaluate the events they will attend. Organisers need to ensure adequate attendance – as this is the measure of the success of the organised event.

There are multiple objectives for attending an international conference, such as education (providing an opportunity to update knowledge), inspiration (enabling attendees to hear new ideas and meet professional leaders), evaluation (allowing individuals to review their own work and plan for the future), presentation (providing a platform for research dissemination), and recreation (providing an opportunity to relax and enjoy the company and culture around the conference) (Cutting, 1995). A survey of scholars who attended conferences, as outlined in Table 3 by V. Pavlukovic and M. Cimbaljević (2020), uncovered essential factors that influenced conference selection.

Academic institutions are interested in developing international scientific cooperation. It is one of the factors of the internationalisation of universities (Śtepień-Kuczyńska, Włodarska-Frykowska (eds.), 2017; Smętkowski et al., 2017). It influences the prestige of a university and can have an impact on the amount of funding raised. M. Antczak and G. Czapnik (2020) emphasise that scientists are often motivated to participate in various types of scientific meetings to exchange information and knowledge, integrate the environment and establish cooperation. Participation in scientific conferences often has an impact on an employee’s evaluation and also on his or her salary and professional bonuses. Conferences are one of the fundamental forms of scientific cooperation, both nationally and
Tab. 2. Main types of conferences.

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<tr>
<th>No</th>
<th>Type of conference</th>
<th>Characteristics</th>
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<tr>
<td>1.</td>
<td>Academic conferences</td>
<td>They maybe sponsored by professional societies, industry associations, or academic entities. The core part of an academic conference often consists of peer-reviewed research paper presentations and prepared talks; attendees come to learn, discuss, and network. Key characteristics are: low registration fees, discounts for students, paid participation, size ranging from small to large.</td>
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<td>2.</td>
<td>Commercial conferences</td>
<td>They are organised by media companies and feature tutorials, keynotes, and panels delivered by industry experts. In comparison to academic conferences, registration fees are higher, and speakers are paid to present. Conference size is generally large.</td>
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<td>3.</td>
<td>Developer conferences</td>
<td>They focus on company product ecosystems. Conference size is generally large.</td>
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<td>4.</td>
<td>Trade association conferences</td>
<td>They are organised to showcase the latest products and innovations in an industry. Participants market products to increase sales. The conference size is generally large to ultra large with tens of thousands of attendees.</td>
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<td>5.</td>
<td>Government/NGO conferences</td>
<td>They initiate and continue discussions on policies and innovations with societal breadth. The conference size varies from small to ultra large.</td>
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Source: Fraser, Mancl, 2023.

Tab. 3. Factors and sub-factors determining participation in the conference.

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<th>No</th>
<th>Factor</th>
<th>Sub-factor</th>
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<tbody>
<tr>
<td>1.</td>
<td>Destination stimuli</td>
<td>Attractive destination image; scenery/sightseeing/shopping opportunities at the conference destination; getting away from the routine work</td>
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<td>2.</td>
<td>Costs and destination accessibility</td>
<td>Conference registration cost; transportation cost; accommodation cost; the conference destination easy to access (direct flights); the time required to travel to the conference destination</td>
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<tr>
<td>3.</td>
<td>Educational and professional opportunities</td>
<td>Desire to learn and gain new knowledge; professional advancement; new professional contacts, developing a professional network</td>
</tr>
<tr>
<td>4.</td>
<td>Intervening opportunities</td>
<td>Family; health conditions for travel; at least one accompanying colleague from the university/department; previous destination experiences; overlapping conference dates with vacation</td>
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<td>5.</td>
<td>Location factors</td>
<td>Quality of accommodation services at the conference destination; safety and security at the conference destination, weather at the conference destination</td>
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<tr>
<td>6.</td>
<td>Conference factors</td>
<td>Conference reputation; well-known speakers; other conferences on a similar topic in the same period</td>
</tr>
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</table>


internationally. They can result in publications in prestigious journals and post-conference material (Suchanek, 2020). Conference participants are advised to verify the quality of the conference by answering 10 questions:
1. Are you aware of the society or the association organising this conference?
2. Can you easily identify the venue of the conference?
3. Is it clear what fees will be charged (conference fee, registration fees, etc.) and would these be waived if you are accepted as a speaker?
4. Are any of the sponsors involved in the conference? Are you aware of any of them?
5. Did you check the conference website? Is all the information (such as the attendance fees, submission date, conference date, editorial committee, program details, venue) presented in a proper way?
6. Is there clear information about the timeline and the agenda for the conference?
7. Have you read any papers from this conference proceedings before?
8. Is the Editorial Committee listed on the website? Have you heard of the Editorial Committee members before?
9. Do the scope and objectives of the conference fit your field and core interest or not?
10. Is the Committee clear about the editorial control over presentations and the type of peer-review it uses?

Conference proceedings can be submitted for indexing in databases. Among the most important bibliographic and bibliometric databases are first of all the Web of Science Core Collection, owned by the company Clarivate Analytics, and the Scopus database of the Elsevier publishing house. Materials submitted for indexing undergo a multi-stage review by experts. Expert judgement is made on both the quality of the conference and the publication, but also on the fulfilment of publishing and ethical standards. A positive outcome of this particular evaluation process and the decision to include the conference in the database is a confirmation that it represents a high scientific level (Drabik, 2018).

International scientific conferences enable the development of collaborative networks (Knop, Olko, 2018) spanning academic institutions and academics. They also contribute to the internationalisation of universities (Siwińska, Mazurek, 2017), which is the process of integrating international, intercultural and global dimensions into the provision of educational services at the academic level (Dymyt, 2018). As M.M. Kisleva et al. (2020) note, sharing experiences and knowledge at the international level has become a motivator for international collaboration.

3. The nature and organisation of the Economic and Social Development conference (ESD)

The ESD Conference (Fig. 1) is a project targeting the enhancement of integration and international collaboration among scientists. The key component of this initiative is the organisation of consistent meetings that provide a platform for individuals to showcase their research and disseminate their findings in peer-reviewed conference proceedings and scholarly publications.

The initiators of the ESD Conference were the Croatian company Varazdin Development and the Entrepreneurship Agency (VADEA) and the Croatian University of North. These institutions organised the 1st International Scientific Conference “Economic and Social Development” (ESD) in 2012. The conference consisted of 3 scientific sections:
1. Challenges of the modern world – contemporary economy and globalisation,
2. Enterprise in turbulent environment,
3. Entrepreneurship between creativity and bureaucracy.

The success of this event prompted the initiators of the conference to organise cyclical events taking place in various cities in Europe and then in other continents. Over time, the 3 sections were supplemented by conference topics (Table 4).

The implementation of the ESD project required the creation of an organisational system to coordinate 4 activities related to the organisation of the conference: administrative activities, event activities, publishing activities and indexing activities (Fig. 2). Administrative activities related to the preparation of the conference are carried out by the main organiser, VADEA. They include formal, financial and logistic and marketing issues. Conferences often have co-organisers who, in most cases, are the universities at which the meetings take place.

An important role in the development and promotion of the ESD project is played by 31 partners, most of whom are universities (Fig. 3). Other partners are NGOs and representatives of business and administration. One of the most prestigious partners is the President of Croatia. On the other hand, the most important research partner is the Polish University of Warsaw.

The ESD project partners come from 16 countries. The largest number of partners are from Croatia. There are also non-European partners from Australia, Argentina, the United Arab Emirates, Azerbaijan and Morocco (Fig. 4).
Tab. 4. Sections and topics of ESD conferences.

<table>
<thead>
<tr>
<th>No</th>
<th>Section</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1</td>
<td>Globalisation and challenges of the modern world</td>
<td>Contemporary Economy and Globalisation; The Economic Impact on Social Development and Democracy; Regional Development; National Economies Between Liberalisation and Intervention; International and Local Capital Markets; Education and Knowledge Management; Towards Modern Welfare Economics; Modern Tendencies in Economy and Management of Tourism</td>
</tr>
<tr>
<td>2</td>
<td>Enterprise in turbulent environment</td>
<td>Building a Resilient Organisation; The Economics of Modern Enterprise; Planning or Predicting: Concepts and Models; Corporate Governance; Manufacturing: Strategy, Technology, and Organisation; Human Capital Management; Marketing Perspective; The Legal Environment of Business; Business Continuity; ICT Support to Business Activities; Corporate Finance; Accounting and Auditing</td>
</tr>
<tr>
<td>3</td>
<td>Entrepreneurship Caught Between Creativity and Bureaucracy</td>
<td>The Role of SMEs in National Economies; SMEs in Global Value Chains; Education for Creativity</td>
</tr>
</tbody>
</table>

Source: https://www.esd-conference.com

Fig. 2. The organisational system of ESD conferences.
Source: own elaboration
The organisation of the conference involves the appointment of three committees: the Organising Committee, the Scientific Committee and the Review Committee. The members of the Committees serve honourably and do not get paid for their work.

The preparation of the publication is the next stage. Editorial staff is appointed to produce conference proceedings and academic journals. The policy is that papers can only be published in English. At least two reviewers per paper are involved in an international peer review process. Authors are then informed of potential reviewers’ suggestions (double-blind peer review). VADEA has signed agreements with institutions involved in the indexing of scientific articles in databases such as Web of Science, Econlit, Proquest and ECONBIZ. In addition, the authors have the possibility to publish their articles in 15 partner scientific journals.

VADEA has started to publish its own journal, the Journal of Economic and Social Development. The agency wanted to help all the collaborators in the development of their scientific projects and, above all, in the dissemination of their research results. This was the main reason for creating its own journal. After a few years of publishing mainly selected papers from regular and thematic conferences, the journal now presents unpublished papers and is open to all authors worldwide.

4. Development of ESD Conferences in 2012–2022

In international relations research, the development of AI refers to changes in the international position of states as a group of participants in international relations, and the assessment of the rankings of the development Laboratory of Deep Learning Technology and Applications and the National Engineering Laboratory of Brain-Inspired Intelligence Technology and Applications.

In the case of authoritarian states, it is easier to use large databases for military purposes because access to them is supported by digital censorship mechanisms. Moreover, public discourse is shaped in
such a researchers claim that the near future of using AI for geopolitical purposes belongs to authoritarian regimes (Dominioni, 2019, p. 166–169).

The number of ESD conferences organised in 2012–2022 shows an upward trend. In 2019 and 2020, 14 conferences were organised. In 2021 there was a slight decrease in the number of conferences (Fig. 5). In 2022, the number of conferences increased again to 14. During the COVID 19 pandemic, conferences were held online or in a hybrid version.

A total of 92 conferences were held in the period of 2012–2022. Most conferences were organised in Croatia, Portugal, Serbia and Russia (Fig. 6).

The conferences took place in both large cities (e.g. New York, Moscow) and small towns (e.g. Cakovec in Croatia).

Fig. 5. The number of ESC conferences organised in the period of 2012–2022.

Fig. 6. The number of ESC conferences organised in the period of 2012–2022, by country.
Conferences took place in 23 countries on 6 continents. In Europe, conferences were held in 16 countries, in Asia in 3 countries and on other continents in one country. The vast majority (83%) of conferences were organised in Europe (Fig. 7). This was followed by Africa and Asia with 7% and 6% of conferences, respectively.

The number of conferences held in a given country in a given year ranged from 1 to 5. The last case concerns Croatia. Conferences in Croatia have been organised regularly since 2013, but since 2016 at least 2 conferences have been held in Croatia. In 2022, 5 conferences were organised in this country. More than one conference was also organised in Russia. Since 2020, no conference has taken place in this country. In 2020–2022, 6 virtual conferences were organised. A detailed list of the conferences organised in each country in the period 2014–2022 is presented in Table 5.

![Fig. 7. Percentage share of ESD conferences organised per continent. Source: own elaboration based on ESD webpage, available online https://www.esd-conference.com/past-conferences (accessed 15 Nov. 2023).](image)

**Tab. 5. Number of conferences organised in each country in the period of 2012–2022**

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Out of 92 conferences, 34 conferences were indexed in the WoS database and 68 conferences in the EconLit database (Fig. 8). This corresponds to 36.96% and 73.91%, respectively.

All conferences organised in a given year were indexed three times in the WoS database (2015, 2016, 2017). The EconLit database also indexes three times (2014, 2016, 2021) all conferences organised in a given year. Conferences that were organised after the year 2019 are still waiting to be indexed in the WoS database.

A total of 1,465 scientific articles from ESD conferences were indexed in the Web of Science database (Fig. 9). The highest number of indexed articles were published in 2017 (440 articles), the lowest in 2019 (28 articles).
The articles were written by authors from 91 countries. The largest number of articles (Fig. 10) was published by authors from Croatia, Russia and Poland.

The published articles were assigned to 7 scientific disciplines included in the WoS database (Fig. 12). The discipline ‘Regional urban planning’ (40.46%) had the largest number of publications.

The ESD Conference website is visited by users from almost all over the world. In 2019, it had over 150,000 visitors (Fig. 11). Since that year, the number of visitors to the website is on the decline. In 2022, Croatians (18.5% of visitors), Americans (10.26% of visitors) and Moroccans (7.15% of visitors) were the most frequent visitors to the website.

![Fig. 10. Number of ESD conference papers from specific countries indexed in Web of Science. Source: own elaboration based on Web of Science (2022) available online: https://www.webofscience.com/wos/woscc/summary/316696ba-3b5f-4116-85cf-4ec2b8cda9c8-48b56a0f/relevance/1 (accessed 15 Nov. 2023).](image)

![Fig. 11. The number of visitors to the ESD conference website in the period 2018–2022. Source: own elaboration based on information from ESD conference organiser](image)
5. Conclusions

International conferences have become an integral part of scientific collaboration. Scientists have many reasons for attending conferences. The choice of conference is determined by a number of factors, including the prestige of the event and the opportunity to publish their research in peer-reviewed proceedings that are indexed in databases. Attending an ESD conference provides such an opportunity. More than 10 conferences are held each year. Most of them are held in Croatia, as ESD is a Croatian project. Conferences organised in Portugal are becoming more and more popular. Some conferences take place in other continents.

The conference governance model is well established with three committees: organisational, scientific and review. The success of the event is also due to the commitment of the co-organisers and partners, including the President of Croatia. The ESD Conference has become a branded event in an increasingly demanding conference market. The organisers have managed to survive the difficult pandemic period. The challenge is to maintain a high level of content and to offer additional attractions for participants.

The international nature of the conference is also reflected in the geographical structure of the authors of the articles indexed in the WoS database. Authors come from 92 countries. The time taken to index articles continues to increase. This situation requires the organiser to look for alternative solutions. One of these is to publish its own scientific journal and to offer participants an opportunity to publish in partner scientific journals indexed in prestigious databases.

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Fig. 12. The number of papers from ESD conferences from specific disciplines indexed in the Web of Science database. Source: own elaboration based on Web of Science (2022), available online: https://www.webofscience.com/wos/woscc/summary/316696ba-3b5f-4116-85cf-4ec2b8cda9c8-48b56a0f/relevance/1 (accessed 15 Nov. 2023).


