

THE IMPACT OF INTERNATIONAL SCIENTIFIC CONFERENCES ON SCIENTIFIC COMMUNITIES AND THEIR ENVIRONMENT

ZARA MKRTCHYAN

Head of Innovation Department,
Institute of Applied Problems of Physics, NAS, RA,
Lecturer, Course developer,
Management and Economics Department,
International Scientific Educational Centre, NAS, RA,
PhD in Economics
zarahmkrtyan@gmail.com

TATEVIK MUSAYELYAN

MBA, Engineer, Innovation Department,
Institute of Applied Problems of Physics, NAS, RA
musayelyantatevik@gmail.com

ARUS MKRTCHYAN

MBA, Engineer,
Network Cooperation Division,
Institute of Applied Problems of Physics, NAS, RA
arusperj@gmail.com

SHUSHANIK PANYAN

MBA, MBA Post graduator from ISEC, NAS, RA,
Senior technician, Innovation Department,
Institute of Applied Problems of Physics, NAS, RA
panyanshushanik@gmail.com

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Abstract

International scientific conferences, symposiums and forums offer and provide a unique opportunity to raise awareness of research findings faster and more effectively than any other platforms. Researchers, scientists, students, educators, and professionals in the field should seize every advantage of all opportunities to present their research results. Presenting and delivering papers, real-life presentations, and virtual reports at ISCSs is an effective way to consolidate and share knowledge. Speakers have the opportunity to talk about and present their research findings and innovations to colleagues in the similar and related academic fields, receiving both positive feedback and constructive criticism that can enhance their research work. The exchange of ideas on areas of interest seeds

global connections, laying ground for future collaborations. Many who were once simply participants in ISCSs are now working on the world's largest research projects, writing, developing and publishing groundbreaking research papers and studies.

The new research methodologies and innovations discussed at conferences can be practically applied across and spread to different scientific fields and industries. And all together the high-profile events attract greater attention and participation, increasing the overall impact on the scientific community. The toolset used in the event of the ISCS is comprehensive, varies based on the set goals and the potential investment. In a critical light, this is one of the platforms for marketing of scientists and their results, essentially functioning as a business management tool for scientific outcomes and events.

Keywords: Scientific Conferences, Innovation, Impact, Interdisciplinary, Toolset.

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նորարարությունների բաժնի ղեկավար,

ՀՀ ԳԱԱ գիտակրթական միջազգային կենտրոնի
կառավարման և տնտեսագիտության ամբիոնի դասախոս,
տնտեսագիտության թեկնածու

zarahmkrtyan@gmail.com

ՏԱԹԵՎԻԿ ՄՈՒՍԱՅԵԼՅԱՆ

ՀՀ ԳԱԱ ֆիզիկայի կիրառական պրոբլեմների ինստիտուտի
նորարարությունների բաժնի ինժեներ,

մագիստրոս

musayelyantatevik@gmail.com

ԱՐՈՒՍ ՄԿՐՏՅԱՆ

ՀՀ ԳԱԱ ֆիզիկայի կիրառական պրոբլեմների ինստիտուտի
ցանցային համագործակցության բաժնի ինժեներ,

մագիստրոս

arusperj@gmail.com

ՇՈՒՇԱՆԻԿ ՓԱՆՅԱՆ

ՀՀ ԳԱԱ ֆիզիկայի կիրառական պրոբլեմների ինստիտուտի
նորարարությունների բաժնի ավագ տեխնիկ,

մագիստրոս, ԳԿՄԿ շրջանավարտ

panyanshushanik@gmail.com

Համառոտագիր

Միջազգային գիտական կոնֆերանսները, սիմպոզիումներն ու ֆորումները առաջարկում և ընձեռում են եզակի հնարավորություն՝ բարձրացնելու հետազոտությունների արդյունքների մասին իրազեկությունն ավելի արագ և արդյունավետ, քան ցանկացած այլ հարթակ: Հետազոտողները, գիտնականները, ուսանողները, մանկավարժներն ու ոլորտի մասնագետները պետք է օգտվեն իրենց հետազոտության արդյունքները ներկայացնելու բոլոր հնարավորություններից: ՄԳՀՄ² -ներում (Միջազգային գիտական համաժողովներ և սիմպոզիումներ) հոդվածների, իրական ներկայացումների և վիրտուալ

² Միջազգային գիտական համաժողովներ և սիմպոզիումներ

գեկույցների ներկայացումն ու մատուցումը գիտելիքների համախմբման և փոխանակման արդյունավետ միջոց է: Բանախոսները հնարավորություն ունեն խոսելու և ներկայացնելու իրենց հետազոտության արդյունքներն ու նորարարությունները նմանատիպ և հարակից ակադեմիական ոլորտների գործընկերներին՝ ստանալով և՛ դրական արձագանքներ, և՛ կառուցողական քննադատություններ, որոնց միջոցով կարող են բարելավել հետազոտական աշխատանքի որակը: Հետաքրքրությունների ոլորտների վերաբերյալ մտքերի փոխանակումը սերմանում է գլոբալ կապերը՝ հիմք ստեղծելով ապագա համագործակցությունների համար: Շատերը, ովքեր ժամանակին պարզապես ՄԳՀՄ-ների մասնակից էին, այժմ աշխատում են աշխարհի խոշորագույն հետազոտական նախագծերի վրա՝ գրելով, մշակելով և հրատարակելով բեկումնային հետազոտական հետազոտություններ և ուսումնասիրություններ:

Գիտաժողովներում քննարկվող հետազոտությունների նոր մեթոդաբանությունները և նորարարությունները կարող են գործնականում կիրառվել և տարածվել գիտական տարբեր ոլորտներում: Բարձր մակարդակով կազմակերպված միջոցառումները գրավում են ավելի մեծ ուշադրություն և մասնակցություն՝ մեծացնելով ընդհանուր ազդեցությունը գիտական հանրության վրա: ՄԳՀՄ-ի դեպքում օգտագործվող գործիքակազմը համապարփակ է, որը տարբերակվում է կախված սահմանված նպատակներից և հնարավոր ներդրումներից: ՄԳՀՄ-ները գիտնականների և նրանց արդյունքների շուկայավարման հարթակներից մեկն են, որոնք հիմնականում բիզնեսի կառավարման գործիք են գիտնականների, գիտական արդյունքների և իրադարձությունների համար:

Բանալի բառեր՝ գիտական համաժողովներ, նորարարություն, ազդեցություն, միջտարակարգային, գործիքակազմ:

Introduction

The purpose of this research is to study the impact of international conferences, forums, and symposiums on the organization, its environment, the sector, and stakeholders, and to evaluate the results created by international conferences and forums in specific scientific fields. For scientists, international conferences serve as a platform for disseminating research findings, gaining recognition and establishing new collaborations. The popularity of scientific events is often influenced by the caliber of speakers, the relevance of topics, and the opportunities for networking and collaboration. Usually, innovations in various fields of science, research findings and applications get presented at ISCS³. And the new research methodologies and innovations discussed at conferences can be practically applied across and spread to different scientific fields and industries. And all together the high-profile events attract greater attention and participation, increasing the overall impact on the scientific community. The toolset used in the event of the ISCS is comprehensive, varying based on the set goals and the potential investment. In a critical light, this is one of the platforms for marketing scientists and their results, essentially functioning as a business management tool for scientific outcomes and events.

³ International Scientific Conferences and Symposiums

For these purposes, the outcomes of organizing, implementing, and summarizing international conferences, forums, and symposiums was put on pass of analyses.

Theory And Methodology

Usually, encouraging the adoption of cutting-edge approaches ensures the continued evolution of research and practice.

During international scientific conferences, forums, and symposiums (hereinafter referred to as ISCS), the followings are layered:

- Solution to the problem is presented
- New areas of research are identified,
- Participants are informed about and familiarized with the latest scientific results,
- Scientific findings and applied results are shared and disseminated,
- Access to scientific and applied knowledge and results is facilitated,
- Participants are introduced to and acquainted with new culture,
- Opportunities to get acquainted and interact with experienced representatives and professionals of the field is provided, (Oester et al., 2017)
- Discussions and clarifications of issues of mutual interests occur,
- New collaborations are initiated, agreed upon, and created,
- New research works are published and made publicly available.

When participating in ISCSs, stakeholders include all those involved in conference: honored guests, keynote speakers, speakers, presenters, participants, organizers, hosts, attendees, the audience, those who are involved in infrastructure regulation, as well as representatives of local government bodies.

During ISCS, complex networks of academic and non-academic professionals are formed and actively operate, contributing to the discussions and dissemination of new knowledge. (Oester et al., 2017)

During ISCS, actions, activities are taken, processes are unfold that extend far beyond the mere exchange of information. During ISCS, researchers have the opportunity to meet with peers, researchers, establish new connections, maintain old contacts, existing relationships, conduct in exploratory discussions, and initiate new collaborations. Therefore, we can say Conferences can have a great scientific and social impact. International Conferences and Symposiums are considered as important roads and crucial events for generating both scientific and social impact. (Haus, 2020)

The experience gained by young scientists during conferences is an integral part of their learning process. It enhances and stimulates their information and research capabilities, fosters the development of networking strategies and relationships, and helps establishe valuable connection with other specialists. Analysis of studies and surveys has shown that doctoral students apply strategic approaches to seeking new knowledge in scientific institutions, tailored to their specific stage of qualification.

Four stages of socialization are distinguished in the process of participation of ISCS.

In the first phase, doctoral students are faced with new rules and roles. During this phase, novices learn and assimilate the rules of the ISCS and become familiar with the distribution of roles, listen to and accumulate flows, and observe the regulations in practice.

In the second and third stages, newcomers become more goal-oriented. They master the disciplinary rules of the engagement, gain confidence in formulating their professional goals, and take purposeful steps to advance in their field.

In the fourth stage, newcomers assimilate their new formed role as a researchers, solidifying their professional identity. (Hauss, 2020)

Communication with experts in the field, along with the scientific and technical support received, serves as a powerful source of motivation for participants in international conferences. During these events, participants have the opportunity to:

- Get acquainted with and explore innovative directions in their field,
- Receive created incentives for career growth,
- Form new perspectives,
- Hear diverse and opposing viewpoints,
- Identify promising research approaches,
- Receive motivational support and mentoring, perspectives which are demonstrated for newcomers,
- Discover outlined knowledge-based entrepreneurial opportunities,
- Get the instilled technical foresight,
- Improve presentation and communication skills,
- Receive valuable feedback,
- Generate the opportunity for close collaboration, establish close collaboration,
- Build bridges to new partnerships.

Connecting with experts in the field, traveling, socializing, interacting with experts and professionals from diverse age groups, and publishing their research contribute to strengthening the research discipline and lay a foundation for future collaboration.

Participation in ISCS offers an opportunity for self-reflection and the evaluation of one's own knowledge and potential at an international conference, fosters communication and collaboration, and enhances presentation skills. (George, 1981), (Allconference alert, 2024)

Participating in SCS reveals areas for improvement, helping individuals identify abilities, skills and behaviors that need improvement. It also provides a strategy to focus on and expand hidden abilities, while avoiding habits and customs that hinder progress.

Participating and presenting at ISCS broadens the scope of the one's work, showcasing it to a diverse and wide audience gathered from various countries around the world.

Additionally, ISCS and SCS offer ample opportunities to visit new places, experience new different cultures, and explore the cuisine of the host countries.

The numerous goals and benefits outlined above provide strong and sufficient reasons for organizing and participating in ISCS and SCS⁴.

Innovations in the fields of physics, astronomy, chemistry, and materials science, along with findings and research results and the corresponding applications of these developments are presented at ISCS and SCS. The innovations, with their inherent potential, spread to related fields in a hierarchical manner. The hierarchy revealed by these discoveries is unique and clearly illustrates the interconnectedness of disciplines, even in areas where these connections might not be immediately apparent. (See Figure 1.)

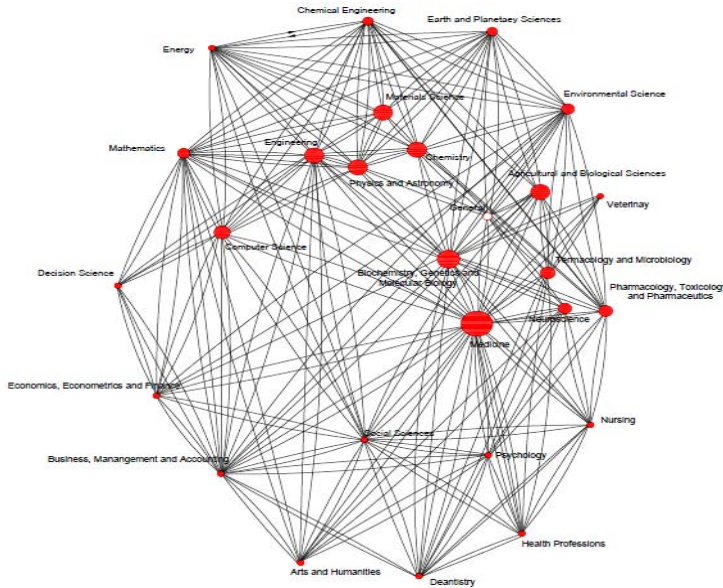


Figure 1. The Impact on the Sector and Related Industries.⁵

The stronger the mutual connections and feedback loops, the greater the influence one sphere has on another. The diagram illustrates spheres of mutual influence. However, in all cases there is some degree of interconnectedness, even if these connections are weak in certain instances. The extent of influence is also shaped by meanders.

Scientific events, such as ISCS and SCS, etc., may undergo various changes in terms of organization, structure and communication methods. Epidemics, crises and force majeure are prompting a redefinition in science landscape. Scientific communities, unions and associations are called upon to think more about the inclusion of digital tools into the traditional formats of an academic conference and the digital transformation of the format and to actively embrace the transformation of these events.

Digital technologies should be purposefully and timely employed to

⁴ Local scientific conferences and symposiums

⁵ Composed and revised by the authors; autocoded by T.Musayelyan

enhance the qualification of young scientists, enabling the organization of virtual conferences, interactive webinars and online discussions. When conferences are held “virtually”, of course, one of the key challenges is maintaining the informal, personal and social aspects that are important component and crucial to knowledge production.

Attending a conference provides an opportunity to enrich foundational knowledge, acquire new skills, and make contacts that would not otherwise be possible. (Bourliofas, 2023), (Allconference alert, 2024). Often, networking is acquired during conferences and particularly during breaks. Depending on who the conference speakers are and the audience size is, the impact of the conference can be understood and gauged. And the higher the impact indicators, the greater the rating of the ISCS.

Conducted analyses and studies show that the impact of ISCS and SCS is directly linked to the quality of the participating speakers and the quality of the audience.

In line with the times, participation in ISCSs is becoming increasingly important for scientists at all levels. An academic representative, a scientist can participate in ISCS and SCS in five different formats.

1. As a participant, receiving an ISCS and/ or SCS participation package.
2. As a speaker, presenting at the ISCS and receiving the ISCS package.

If the speaker is skilled, he/she receives an additional certificate as the “Best Speaker”.

3. As a representative of the specified research and/or field.
4. As a representative with outstanding influence in the specified field.
5. As a jury member and/ or a chair of a specific research field, the ISCS participant receives an organizational certificate for the work performed, for their contributions, and an appropriate honorarium.

In all five cases listed above, event participants will earn “points” that will add value to their resumes and these accumulated “points” will be taken into account for job promotions: from assistant to associate professor, from associate professor to professor, etc..

Thus, we can conclude that International Conferences are very important and have groundbreaking impact on the careers of scientists and on scientists as humans as well.

ISCSs mainly focus on presenting research results, ideas on productivity, innovation and entrepreneurship. They bring together leading scientists, researchers who share their experience, skills, findings and research results on all the cornerstones of innovation, productivity and entrepreneurship, as well as the special issues that need to be addressed. (George & Coddington, 2009), (George, 1981). These conferences also offer and provide an interdisciplinary, cross-sectoral, dual and multi-purpose platform for researchers, practitioners and educators to present and discuss the latest developments, innovations, trends and concerns, as well as practical challenges and possible solutions in various areas of productivity, innovation, entrepreneurship and the economy.

Research Method

The need for organizing ISCSs in Armenia and the impact of participation have been determined through marketing research conducted via a series of substantive surveys. Specific target groups of respondents were selected for each case. Questionnaires⁶ were developed and compiled considering the outlined specificities. The results of each survey are based on the outcomes of discussions with different “narrow” professional groups that participated in ISCSs and SCSs at various time intervals.

The questionnaire package was composed of sub-questionnaires as follows: 10+1+1+6 questions. The questionnaire package was provided to the participants of the target groups for completion in both paper and electronic formats.

Research was conducted among the participants of three youth ISCSs. The number of participants in the three youth SCSs was 47, 93, and 61, respectively. In the second youth ISCS the survey involved 93 participants. In the first and third ISCSs, the number of participants was 47 and 61, respectively.

To save time for ISCSs participants and avoid unstructured responses, the questions were designed with “borderline style” answers. Additionally, the participants’ age groups, levels of professionalism, and academic degrees were taken into account, as well as the involvement of the audience. The overall data obtained from the completion of the questionnaires during the ISCS sessions have been summarized. The results of the questionnaires completed by the selected target group from each ISCS participant are presented in “Table 1”⁷, “Table 1.1”, “Table 1.2”, “Table 1.3”, “Table 1.4”, “Table 2”, “Table 2.1”, “Table 2.2”, “Table 2.3”, “Table 2.4”, “Table 3”⁸, “Table 3.1”, “Table 3.2”, “Table 3.3”, and “Table 3.4”.

To provide a clear view of the data, graphical representations have been created based on the “Table 2”, “Table 2.1”, “Table 2.2”, “Table 2.3”, “Table 2.4” for the ISCS with 93 participants.

The tables and graphical representations are done and evaluated. Here are presented only the data of the ISCS with 93 participants among whom the individual questionnaires within the questionnaire package were conducted. The questions in questionnaires have their boundary responses, and the graphical representations of their analyses were driven.

The detailed analysis of the surveys conducted during the youth ISCSs literally describe the results obtained.

Results

The interpretation of survey tables for youth ISCS with 93 Participants in lined with used method.

⁶ Questionnaires were developed by the research team.

⁷ “Table 1.” and its sub-tables – Questionnaires and surveys of ISCS with 47 participants. Tables are not included in paper. The results are included in conclusions, recommendations and are summarised.

⁸ “Table 3.” and its sub-tables – Questionnaires and surveys of ISCS with 61 participants. Tables are not included in paper. The results are included in conclusions, recommendations and are summarised.

According to the research data, the degree of necessity for organizing ISCSs is substantiated on the following surveys⁹ results.

Table 2.1. The questionnaire containing 10 questions, titled “Why organize International Conferences” has recorded the following results:

1. There is the problem that needs to be investigated:

According to the surveys, 16.13% of respondents answered “insignificant”, 19.35% chose the “slightly” option, 26.88% selected the “moderate” response, 21.51% chose “very,” and 16.13% selected “expressed.”

2. The sector needs a conference:

The survey results were as follows: 18.28% of respondents answered “insignificant,” 22.58% chose the “slightly” option, 21.51% selected the “moderate” response, 20.43% chose “very,” and 17.20% selected “expressed.”

3. The organization is planning a targeted gathering:

The results of this survey were as follows: 10.75% of respondents answered “insignificant,” 12.90% chose the “slightly” option, 32.26% selected the “moderate” response, 27.96% chose “very,” and 16.13% selected “expressed.”

4. There is a crisis or problem that needs to be solved:

The percentage results of the survey are as follows: 19.35% of respondents chose “insignificant,” 13.98% selected the “slightly” option, 25.81% chose the “moderate” response, 31.18% selected “very,” and 9.68% chose “expressed.”

5. It strengthens the sectoral targeting:

The following survey results were recorded: 25.81% of respondents answered “insignificant,” 15.05% chose the “slightly” option, 18.28% selected the “moderate” response, 21.51% chose “very,” and 19.35% selected “expressed.”

6. Feedback is required:

The results of this survey are as follows: 9.68% of respondents chose the “insignificant” option, 21.51% selected the “slightly” option, 20.43% answered “moderate,” 25.81% chose “very,” and 22.58% selected “expressed.”

7. It is the demand of the financier:

The results of this survey are as follows: 12.90% of respondents chose the “insignificant” option, 23.66% selected the “slightly” option, 27.96% answered “moderate,” 18.28% chose “very,” and 17.20% selected “expressed.”

8. It recruits the public in order to develop the field, either through work or advocacy:

The results of this survey are as follows: 21.51% of respondents chose the “insignificant” option, 18.28% selected the “slightly” option, 19.35% answered “moderate,” 22.58% chose “very,” and 18.28% selected “expressed.”

9. It strengthens the reputation, credibility and/ or accreditation of the organization:

The survey results are as follows: 20.43% of respondents chose the “insignificant” option, 17.20% selected the “slightly” option, 25.81% answered “moderate,” 15.05% chose “very,” and 21.51% selected “expressed.”

10. It is part of the work:

⁹ Surveys were developed and analysed by the research team.

The results in this section are as follows: 17.20% of respondents chose the “insignificant” option, 16.13% selected the “slightly” option, 16.13% answered “moderate,” 30.11% chose “very,” and 20.43% selected “expressed.”

Table 2.1 WHY ORGANIZE INTERNATIONAL CONFERENCES?

	93 is 100%	Slight	Little	Medium	High	Vast
1. There is the problem that needs to be investigated	fom which in %	16.13	19.35	26.88	21.51	16.13
2. The sector needs a conference	fom which in %	18.28	22.58	21.51	20.43	17.20
3. The organization is planning a targeted gathering	fom which in %	10.75	12.90	32.26	27.96	16.13
4. There is a crisis or problem that needs to be solved	fom which in %	19.35	13.98	25.81	31.18	9.68
5. It strengthens the sectoral targeting	fom which in %	25.81	15.05	18.28	21.51	19.35
6. Feedback is required	fom which in %	9.68	21.51	20.43	25.81	22.58
7. It is the demand of the financier	fom which in %	12.90	23.66	27.96	18.28	17.20
8. It recruits the public in order to develop the field, either through work or advocacy	fom which in %	21.51	18.28	19.35	22.58	18.28
9. It strengthens the reputation, credibility and/ or accreditation of the organization	fom which in %	20.43	17.20	25.81	15.05	21.51
10. It is part of the work	fom which in %	17.20	16.13	16.13	30.11	20.43

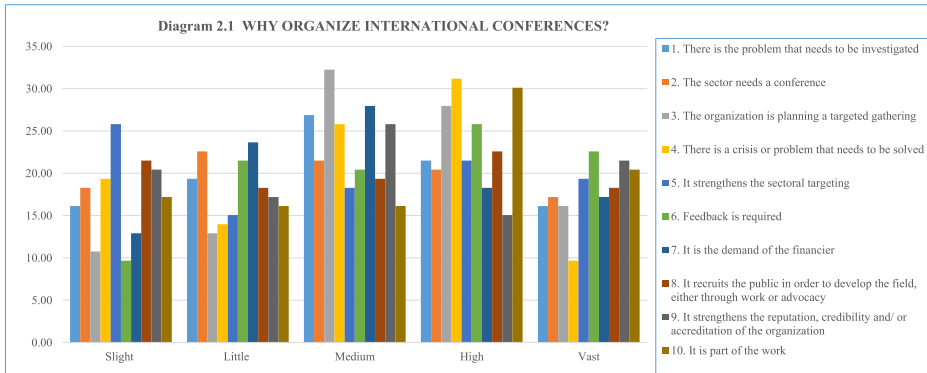


Table 2.2. The question “Would you like to participate in the innovative conference on Physics and related fields?”

recorded the following results based on the surveys: 10.75% answered “I don’t know”; 31.18% answered “yes”; 15.05% answered “no”; 33.33% selected the “very” option, which was the dominant response; 9.68% selected the “expressed” option. A total of 74.19% of participants (31.18% + 33.33% + 9.68% = 74.19%) expressed varying degrees of interest in participating in such a conference. 15.05% did not wish to participate, and 10.75% were undecided.

Table 2.2. WOULD YOU LIKE TO PARTICIPATE IN THE INNOVATIVE CONFERENCE ON PHYSICS AND RELATED FIELDS?

	93- 100%	Don't know	Yes	No	High	Vast
Would you like to participate in the innovative conference on physics and related fields?	fom which in %	10.75	31.18	15.05	33.33	9.68

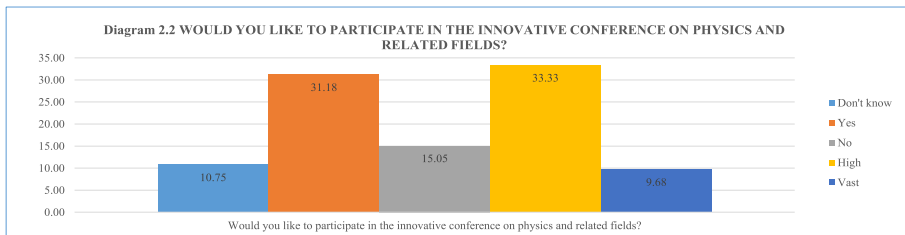


Table 2.3. The question “When should a conference be organized?” with its 6 sub-questions yielded the following results:

1. *When we want to develop the field or inform a certain group of the community about the problem:*

The survey results have the following percentage distribution: 7.53% of respondents answered “insignificant”, 15.05% chose the “slightly” option; 31.18% selected “moderate”; 30.11% chose “very”; 16.13% selected the “expressed” option.

2. *When we want to bring together experienced people, solve the problem that needs to be solved, or work on the problem:*

The options for the sub-question had the following percentage distribution: 8.60% of respondents chose “insignificant”; 16.13% selected the “slightly” option; 29.03% answered “moderate”; 33.33% chose “very”; 12.90% selected the “expressed” option.

3. *When new work or paper in the field should be published:*

The options for the survey question had the following percentage distribution: 5.38% of respondents chose “insignificant”; 18.28% selected the “slightly” option; 26.88% answered “moderate”; 35.48% chose “very”; 13.98% selected the “expressed” option.

4. *When we want to inspire people or restore their work interest:*

The responses to the question were distributed as follows: 13.98% of respondents chose “insignificant”; 12.90% selected the “slightly” option; 25.81% answered “moderate”; 36.56% chose “very”; 10.75% selected the “expressed” option.

5. *Unite the professionals of the field’s expertise:*

The respondents’ selections for the question were as follows: 10.75% chose the “insignificant” option; 11.83% selected the “slightly” option; 24.73% answered “moderate”; 37.63% chose “very”; 15.05% selected the “expressed” option.

6. *Stakeholder wants to achieve success and be prepared for challenges:*

The following results were recorded: 9.68% of respondents chose the “insignificant” option; 17.20% selected the “slightly” option; 30.11% answered “moderate”; 25.81% chose “very”; 17.20% selected the “expressed” option.

Table 2.3. WHEN SHOULD A CONFERENCE BE ORGANIZED?

	93 is 100%	Slight	Little	Medium	High	Vast
1. When we want to develop the field or inform a certain group of the community about the problem	from which in %	7.53	15.05	31.18	30.11	16.13
2. When we want to bring together experienced people, solve the problem that needs to be solved, or work on the problem	from which in %	8.60	16.13	29.03	33.33	12.90
3. When new work or paper in the field should be published.	from which in %	5.38	18.28	26.88	35.48	13.98
4. When we want to inspire people or restore their work interest	from which in %	13.98	12.90	25.81	36.56	10.75
5. Unite the professionals of the field’s expertise	from which in %	10.75	11.83	24.73	37.63	15.05
6. Stakeholder wants to achieve success and be prepared for challenges	from which in %	9.68	17.20	30.11	25.81	17.20

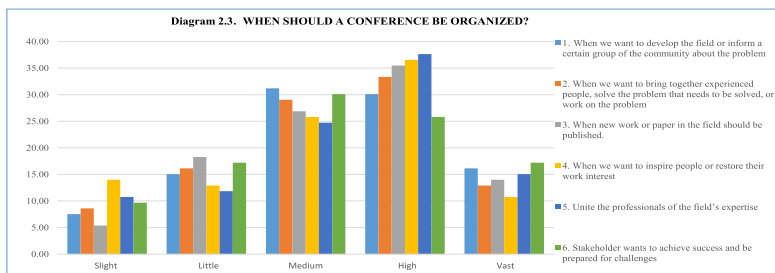


Table 2.4. The question “Change of the impact of the papers submitted and

presented at international conferences” with its sub-questions yielded the following results according to the survey outcomes:

1. To what extent have changed the citations to your papers after the international conferences?

The survey recorded the following results: 16.13% of respondents chose the “insignificant” option; 27.96% selected the “slightly” option; 26.88% answered “moderate”; 17.20% chose “very”; 11.83% selected the “expressed” option.

2. Do the downloads of your papers increase after the international conferences?

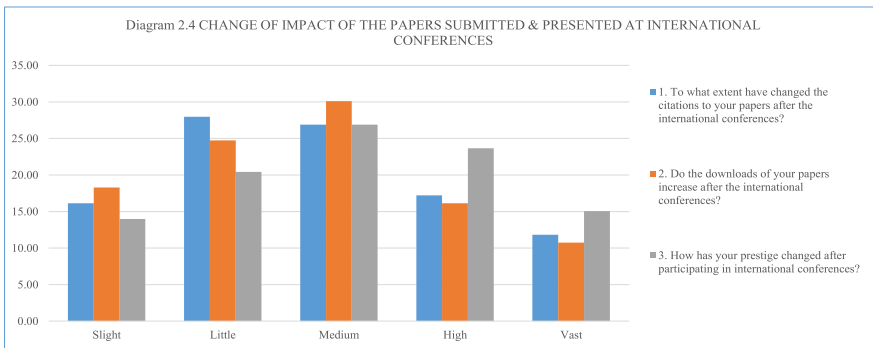
The survey results were as follows: 18.28% of respondents chose the “insignificant” option; 24.73% selected the “slightly” option; 30.11% answered “moderate”; 16.13% chose “very”; 10.75% selected the “expressed” option.

3. How has your prestige changed after participating in international conferences?

The survey results were as follows: 13.98% of respondents chose the “insignificant” option. 20.43% selected the “slightly” option; 26.88% answered “moderate”; 23.66% chose “very”; 15.05% selected the “expressed” option.

Table 2.4. CHANGE OF IMPACT OF THE PAPERS SUBMITTED & PRESENTED AT INTERNATIONAL CONFERENCES

	93 is 100%	Slight	Little	Medium	High	Vast
1. To what extent have changed the citations to your papers after the international conferences?	fom which in %	16.13	27.96	26.88	17.20	11.83
2. Do the downloads of your papers increase after the international conferences?	fom which in %	18.28	24.73	30.11	16.13	10.75
3. How has your prestige changed after participating in international conferences?	fom which in %	13.98	20.43	26.88	23.66	15.05



Survey results make clear that participation in ISCS and SCS provides and holds an average level of Popularity within the scientific community. When organizing ISCS and SCS, one should choose a venue that aligns as close as possible to the theme of the conference. Organizers should understand the level and kind of involvement the conference will have, how honored guests, speakers, participants, and audience members will get to the location where the ISCS or SCS will be organized. In other words, careful planning of all possible options is needed for transportation, accommodation, food, coffee, catering, recreation, familiarization with the country, its attractions and its culture for all participants of the event.

For scientists, ISCS and SCS and R&Ds events serve as platforms for disseminating findings and results, gaining recognition, and establishing new collaborations. Participating in ISCSs provides opportunities to communicate with experts in the field, receive scientific and technical support, and verify authenticity of research findings.

Attending these events helps participants explore and get acquainted with innovative directions, strengthen professional positions. This, in turn, leads to career growth and to the formation of new perspective goals, inspires and encourages participants, also often guiding them toward knowledge-based entrepreneurship. Additionally, participation instills technical foresight, improves communication and presentation skills, creates feedback, promotes close cooperation, as well as weaves bridges for new collaborations and partnerships. To design, develop and strengthen research discipline, it is necessary to establish connections within interconnected professionals in the field of interconnected disciplines, to travel and socialize with professionals across different age groups, and publish work.

Several conclusions based on full analyses and drawn are related to the responses. Here are a few possible insights:

General Interest in ISCSs: A significant portion of respondents expressed varying levels of interest in participating in ISCSs. Around 74.19% of respondents showed some degree of interest (combining those who answered “yes,” “very,” and “expressed”). This suggests that there is a strong interest in ISCSs, especially within specialized fields.

Diverse Views on ISCSs Content: The distribution of responses regarding the effectiveness or impact of articles presented at ISCSs shows diversity in opinions. For example, about 27–30% of respondents chose the “moderate” response, while a considerable number (around 11–16%) felt the content had a “significant” or “expressed” impact, implying that while ISCSs are valuable to many, their impact may vary among participants.

Opinions on ISCSs Timing: When asked “When should a ISCSs be organized?”, the distribution of answers showed a mix of opinions, but the dominant response was “very” (around 30–36% in different instances). This suggests that most participants feel that ISCSs should be scheduled at times that offer maximum relevance and value to them.

Preference for Article Impact: Some respondents felt that the impact of presented articles at ISCSs could be “insignificant” or “slightly” impactful, but a substantial percentage (around 30–40%) selected higher levels like “moderate” or “very,” signaling that, for many, the ISCSs serve as an important platform for knowledge exchange.

Taking into consideration the participants answers and analyses the following is brought forward and offered to organizers:

Focus on Timing and Relevance: The interest in participation is high, but careful attention should be paid to selecting appropriate times for the ISCSs that maximize relevance.

Tailor Content to Different Audiences: Given the diversity in opinions

regarding the impact of ISCSs content, organizers may want to tailor presentations to meet the varying needs and expertise levels of attendees.

Encourage More Active Engagement: Given the fairly strong interest in ISCSs, there might be an opportunity to increase active participation through interactive sessions or networking, which can increase the perceived impact of the ISCSs content.

These insights could be valuable for planning and organizing future ISCSs based on the survey data and will create added value.

Conclusion

The overall conclusion and recommendations are done based on all ISCS's collected data within this research scheme.

Variation in Response Trends: The data shows a notable variation in responses, particularly when measuring the effectiveness or impact of conferences. This indicates that there are likely different groups of people with varying needs and expectations. Some attendees may be looking for more in-depth discussions, while others might prefer lighter, more general sessions. This variation could be indicative of a need to offer multiple types of sessions or track-based programming to cater to diverse preferences.

Interest in Specialized Topics: It's evident that a significant portion of participants is interested in specific topics like Physics and related fields, based on the survey's focus. This suggests that specialized conferences should maintain a robust presence in areas where people feel the need for further exploration and research.

Content Depth and Engagement: The choice of responses, like "moderate" or "very" in terms of article impact, suggests that while there's interest, the depth of content may not always meet the needs of all participants. Perhaps, future conferences could include more opportunities for in-depth discussions, debates, and collaborative workshops to improve participant engagement and satisfaction.

Using of "data-driven approach" for elevating the conference to the next level could be considered for content personalization, implementation of "innovative formats" could be considered for deeper engagement, and creating of "long-term impact" could be focused on that extends beyond the event itself. Moreover, "strategic partnerships", "community-building" efforts, and an emphasis on "sustainability" will ensure the conferences remain relevant, accessible, and highly valued by attendees for years to come.

By integrating these strategies, the quality and impact of the events can be continually improved, the leadership in the field can be solidified, and the long-term success can be ensured.

Recommendations to elevate further are the followings:

Segmenting the Audience: Given that the survey data suggests varying levels of engagement and interest, will be beneficial to consider segmenting the audience based on their interests, expertise levels, or professional background. This would allow for targeted content, ensuring participants receive the most relevant and beneficial information. For example, parallel sessions for different expertise levels

(e.g., beginners, intermediate, advanced) could be organized.

Using Interactive and Collaborative Formats: Participants who are already interested in attending may feel even more engaged if interactive formats such as Q&A sessions, roundtable discussions, or panel debates will be incorporated. Encouraging interaction can also increase the perceived value of the conference, especially for those who selected the “expressed” or “very” categories in the surveys.

Post-Conference Engagement: Post-conference engagement could be a powerful tool for increasing long-term impact. Offering follow-up materials, such as recordings of presentations, further readings, or discussion forums, could ensure that participants continue to feel connected and gain more from the event long after it ends.

Survey Follow-ups for Continuous Improvement: Consider conducting follow-up surveys after the conferences to gather insights about what worked well and where improvements could be made. This will not only show participants that their feedback is valued but will also provide critical data for future event planning.

Creating a Sense of Community: As the survey responses show, participants are highly interested in these events. Creating a sense of community around the conferences (perhaps through social media groups or online communities) could help keep attendees engaged, allow them to share their experiences, and increase the overall value they place on the event.

Personalized Content Tracks: The survey results could be used to segment attendees into smaller, highly specific groups based on their expertise, interests, or professional goals. Tailor content to each group. For example, when it is noticed that participants are split between those with basic knowledge and those with advanced expertise, the content streams can be created that meet each group at their respective levels. Personalized tracks will enhance relevance and engagement.

Predictive Analytics for Topics: Leveraging data science to predict trends in attendee interests. For instance, by analyzing responses over multiple conferences, emerging topics could be identified that are gaining traction among attendees and proactively incorporate them into future events.

Gamification and Rewards: Integrate elements of gamification into the conference experience. For example, a point system for engagement could be set up, where attendees earn points for asking questions, attending specific sessions, or interacting with speakers. Points could lead to rewards like exclusive content, certificates, or even access to VIP networking events.

Interactive Formats Beyond Q&A: Consider moving beyond traditional Q&A. Incorporate “live polls, group challenges”, or “real-time problem-solving sessions” where attendees can collaborate on pressing issues. This not only increases participation but also deepens the value attendees get from the content.

Post-Event Analytics: After each event, not just attendee feedback should be analyzed but also how they engage with post-event materials (e.g., videos, resources). Do they return to specific presentations? Do they share content on

social media? This behavior data can provide valuable insights into what truly resonated with the audience and where adjustments are needed.

Tracking of Professional Growth Post-Event: Survey attendees months after the event to gauge the long-term impact of the knowledge gained. Have they applied the insights in their work? Have they made connections that helped advance their professional goals? This feedback can help in refining content for future conferences.

Hybrid and Micro-Content: As conferences increasingly move online, the ISCSs organizers should think about offering “hybrid models” where participants can choose between in-person and virtual attendance. Additionally, consider breaking up longer talks or presentations into bite-sized micro-content pieces (e.g., 7–12-minute videos or audio). This allows participants to engage with the material on their own schedule, which is especially useful for international participants in different time zones.

Immersive Technologies: “Virtual reality (VR)” or “augmented reality (AR)” can be integrated into the conferences for immersive, interactive sessions. This is particularly powerful for scientific, technical, and artistic topics, providing participants with a deeper, more hands-on experience.

Eco-Conscious Events: As sustainability continues to rise in importance, eco-friendly practices can be made a core part of the ISCS event. The paperless conferences, “reduce waste”, and “use digital badges” can be encouraged rather than printed ones. If hosting physical events, partnerships with sustainable vendors can be considered and “all materials are recyclable or biodegradable” can be ensured.

Focus on Diversity and Inclusion: The ISCSs can be ensured to be inclusive in terms of gender, race, and socioeconomic background. Scholarships for underrepresented groups can be offered to attend and actively recruit speakers and participants from diverse backgrounds. A more inclusive environment leads to richer discussions and a broader perspective on issues.

Collaborate with Leading Brands: The strategic partnerships with well-known academic institutions, research organizations, or leading industry brands can be formed. This will not only raise the profile of the conference but also help secure valuable sponsorships. Sponsors can provide financial support, as well as resources and expertise that will add value to the event.

Create Cross-Promotion Opportunities: Co-hosting ISCSs can be considered with other reputable organizations or influencers in the field. Cross-promotion can significantly increase visibility and attendance. Moreover, it opens doors for knowledge-sharing and networking with a wider pool of experts.

Curated Networking Opportunities: Structured networking opportunities can be created and tailored to specific interests or fields of expertise. For example, “meetups” based on topics like “Emerging Tech”, “Sustainability”, or “Research Innovation” can be organized. Apps or online platforms can be used to connect participants with similar interests before, during, and after the ISCS event.

Long-Term Community Building: Beyond the events themselves, a

community around the ISCSs can be built. This can be done through social media groups, online forums, or membership platforms that continue engaging attendees throughout the year. Encouraging participants to stay connected and share insights or projects post-event, thus sustaining the value of the community.

Dynamic Pricing Models: To increase access, “tiered pricing” offer can be considered based on when participants register, with early birds receiving a discount. Offer of different ticket types can be explored (e.g., VIP tickets with exclusive access to speakers or content) to diversify the revenue streams.

Streamlined Operations: “AI tools” can be used for administrative tasks such as scheduling, registrations, and personalized content recommendations. Automating these processes not only reduces operational costs but also enhances the participant experience by providing personalized interactions.

Conclusion Summary:

Participating in ISCSs and SCSs helps to test the theories behind their work, enrich the research, and expose it in meaningful debates. ISCSs and SCSs are ideal platforms for presenting research, listening opinions and receiving valuable feedback. No matter how progressive the virtual world continues to advance, nothing can replace or surpass the power and impact of real in-person conferences, seminars, and forums.

ISCSs and SCSs are the rarest and most versatile events, and participation is beneficial across all age groups and professional fields. While the interest and engagement levels for conferences are promising, the diverse needs and expectations of the audience suggest that the format and content of future events should be dynamic and tailored. Offering specialized tracks, increasing interaction, and maintaining post-event engagement could greatly enhance the effectiveness and satisfaction of participants.

By focusing on all these, the expectations of the audience will not only meet but also foster growth, ensuring that future conferences continue to attract and engage people and might help refine future strategies and make it even more impactful:

Author Contributions

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

Conflict of Interest Statement

The authors declare no conflict of interest.

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