Vulnerability Space

Vulnerability Meeting Industry in Austria

Group:

V02

Authors:

Anna Pruttseva | Miguel Lucea | Mobin Uddin |

Muhammad Ahmad Qamar | Nur Okta Milatina

Supervisor:

Associate Prof. Mag. Dr. Lukas Zenk

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transition, innovation and sustainability environments

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1. Introduction

The meeting industry is related to the core of any organization, business, community, or workplace which helps them interact, coordinate, met and solve problems. Within the context of Europe, Austria is of utmost significance when it comes to being a cultural center of the continent that innately propels tourism potential. It further has good accessibility for having a central location in Europe that makes it suitable for having a massive infrastructure of the meeting industry that is quite visible both in Vienna and in other cities. In 2020, Vienna's meeting industry contributes around 3% of the total Austria's GDP with value around EUR 158 million (The Vienna Tourist Board, 2021). Capitalizing on these reasons, the meeting industry in Austria is considered in this research which is core and central to Austrian companies for their development and progress. However, recently, the meeting industry had to cope with the catastrophe of Covid-19 that caused it to lose 16.5 billion USD just in a year of the pandemic involving 2.75% of layoffs in the industry (Oxford Economics, 2018).

Having seen that the industry had badly adapted to Covid-19, it is essential to take steps to help the industry cope with complex problems that it is going to face resiliently. Catering to this requirement, this work is being undertaken in which experts from science and practice are being brought together by facilitators where a collaboration between them, tapping on their respective expertise, would help achieve the target of ensuring the resiliency of the industry. This collaboration between the experts happens in transdisciplinarity process which is the fundament of this work. The transdiciplinarity (Td) is a mutual learning and knowledge integration process that happens when scientists and practitioners collaborate to identify threats and necessary interventions concerning the problem at hand and thereby present with socially robust orientations for the problem(Scholz & Steiner, 2015a). Transdisciplinarity is a beneficial tool to employ when it comes to tackling complex problems that often involve multiple dimensions and transcend disciplinary boundaries for being understood thoroughly. In this project of Transdiciplinarity journey to tackle the vulnerability of Austrian's meeting industry, this whole process starts with guiding question: **"*How to mitigate risks and leverage opportunities of the meeting industry in Austria by 2030*?"**

It is important to establish that both the risk and opportunity assessment of the meeting industry in the guiding question was considered to completely model the state of the industry that would help in

presenting robust orientations of the industry in the target set year 2030 for the study. The year of 2030 was set considering it as an adequate time for a transdisciplinary process to conclude and being suitably sufficient for practitioners to be interested in seeing the state of the industry by that year which is very significant considering several regulations and targets, especially of the Green Deal and the Paris Agreement.

2. System analysis

The meeting industry in Austria has become a thriving sector in recent years. Vienna, in particular, has established itself as a leading destination for international meetings and conferences, attracting a large number of attendees, speakers, sponsors, and exhibitors. The industry offers many opportunities for growth and success, but it is not without its risks. A systematic analysis of the industry can help identify, mitigate these risks, increase the industry resiliency, and ensure the continued success of the conference meeting industry in Austria.

2.1. The purpose of meeting

Meetings refer to gatherings attended by corporate leaders or industry experts with the purpose of honouring accomplishments, exchanging thoughts, expanding knowledge of the professional arena, and networking with peers (Grado et al., 1997). Topics are varied from discussion about new trends, the challenges ahead, and opportunity to grow the business. The attendance of such type of conference can be people from the same organization or the same industry sector. European Congress of Radiology (ECR), The Game Developers Conference (GDC), World Conference on Disaster Management, and World Economic Forum Conference are some example of business-related conference meeting (UTR Cons, 2022). In a within organization scale, the conference could be in form of seminar, training, team building, rewards events, and talks from motivational speakers (Fyfe, 2023). As a sub-category of event, the aim of an can encompass both tangible and intangible, and the goal may be defined to be achieved either prior to the event, during it, or in its aftermath (Allen, 2009).

One of the purposes of conference meetings is to build professional relationships. Conferences provide a unique opportunity for professionals to network and connect with others in their field. Attendees can

meet new colleagues, potential clients, or business partners. By establishing these relationships, conference attendees can build a strong professional network that can help them grow their businesses and succeed in their careers.

Conference meetings also serve as a platform for growth and knowledge transfer. Many conferences feature workshops, training sessions, and presentations on a wide range of business topics. This type of meeting provide attendees with the opportunity to learn new skills, gain new insights, and stay up-to-date on the latest developments in their fields. Furthermore, conferences often provide opportunities for attendees to be in one-on-one meetings with experts and industry leaders, who can offer valuable advice and guidance. The conference offered attendees numerous small pieces of information, which they utilized to modify their work practices and be better equipped to handle unforeseen circumstances (Henn & Bathelt, 2015).

Conferences also have a big role as a gate for collaboration after the event. The exchange of information during the conference opens the opportunity for attendees to gather insights and speak their ideas which often allow people to meet other professional with the same aim. The collaboration can include anything from developing new products and services, to finding ways to improve business processes and increase efficiency. By bringing together experts and professionals from a variety of industries, conference meetings can facilitate cross-disciplinary collaboration that can lead to breakthroughs and innovations. Researchers from MIT realized this purpose way back in 1998, by releasing a collaborative technology to allow random people connect and have meaningful conversation (Borovoy et al., 1998).

2.2. The impact of covid-19 to Austria's meeting industry`

In general, the meeting industry was estimated to be worth 1,135.4 billion USD in 2019 and is forecasted to grow to 1,552.9 billion USD by 2028, showing a compounded annual growth rate of 11.2% between 2021 and 2028 (Dinesh T et al., n.d.). Before the pandemic, the demand for conference meeting services are increasing in North America, Europe and Asia (Sangpikul & Kim, 2009). Specific in Austria, the meeting industry has generally contributed 3.6 billion USD to the GDP and 41,000 jobs (Oxford Economics, 2018).

The pandemic covid-19 resulted in a massive financial loss for the industry. The events industry had to lose 16.5 billion USD just in a year of the pandemic. 90% of event professionals reported a significant decrease in their business, with 2.75% losing their jobs (Oxford Economics, 2018). Although there is no exact number has been released yet, Austria as the central of meeting industry in Europe certainly also had to face the fall income due to covid-19.

The Austria's meeting industry, included in tourism sector, is believed may fully returned to pre-pandemic levels until 2022, given the successful resolution of the 2021 economic crisis (Badelt, 2021). However, the ongoing and potential future challenges such as geopolitical tension, inflation, energy and food crises, which are closely tied to international circumstances, may pose significant obstacles for the industry's recovery. Further according to report by ITRE committee, meeting industry have faced significant challenges during the crisis due to a decline in mobility and tourism activities. Together with other industries that required face-to-face and physical interaction, these sector industries are expected to endure extended negative effects from these unexpected disruptions (DE VET, et al., 2021).

Before the pandemic, the trend of meeting industry was forecasted towards online format as companies trying to cut their budget due to financial crisis in 2008 (Pearlman & Gates, 2010). Virtual meeting gives more flexibility to join from anywhere, does not required travel expense for the attendees, give opportunity to connect with more people, and less expensive to conduct compare to face-to-face conference. With the physical distancing and several restrictions imposed, the recent pandemic has accelerated the transition towards virtual meetings. A countless number of events that were planned to happen in 2020 were cancelled. To counter further financial loss, many event companies offered alternatives either to postpone or to change the meeting format. Although its benefits, virtual meeting has some drawbacks such as the immersive aspect with often lost, and the fact that not all events professionals are skilled enough in terms of running the technology. Therefore, hybrid format is the emerging format that grow faster due to covid-19 (Disimulacion, 2020; Williams & Santos, 2021).

2.3. Future trends for the meeting industry

As mentioned before, one trend that has become increasingly prevalent in recent years is the shift towards hybrid events. An argumentation that the virtual meeting could be the next trends are also worth

to be considered as the format hold the potential to break down geographical and administrative barriers, leading to increased accessibility, diversity, and inclusiveness (Wu et al., 2022). However, The latest research in South Korea give evidence that the distribution between user who prefer to attend conventional conference or virtual conference are evenly distributed. This research show that by providing both format, the chances an event cater more attendees are higher (Kim et al., 2022). The previous case during 9/11 incident where airport security become much more strict and covid-19 that impose health restriction on borders has shown that the hybrid format will be a trend in the future as alternative option during unprecedented calamities (Dillette & Ponting, 2021).

Besides about the format of conference, another trend that is expected to gain momentum in the future is the emphasis on sustainability and environmentally-friendly practices (for example, ecolabeling). According to Austrian Convention Bureau & Österreich Werbung, Austria registered over 200 green meetings and events, which attracted an estimated 330,000 attendees in total in 2019 (ACB, 2020). With growing concerns about the impact of events on the environment, organizers are becoming increasingly conscious of the need to reduce their carbon footprint. This could include reducing waste, using renewable energy sources, and promoting sustainable transportation options. Citing from Gernot Marx, managing director of the Salzburg Convention Bureau, The trend of sustainable and green meeting will grow stronger after the covid-19 (Meet Salzburg, 2020).

Technology is also predicted to play a significant role in shaping the future of meetings. Continuing from hybrid format, further research shows the use of multiple communication modes in hybrid meetings due to situational or resource constraints hinders interaction and can negatively impact meeting purpose (Standaert et al., 2022). Therefore, the future trends are heading to implement technology can enhance the attendee experience and make events more efficient. For example, virtual reality can provide attendees with a simulated experience of the event, allowing them to interact with others and attend sessions from the comfort of their own homes. Artificial intelligence can also help organizers personalize the attendee experience, providing recommendations on sessions and networking opportunities based on individual interests and preferences (Rubinger et al., 2020).

2.4. The possible major risks for the meeting industry

There are several major risks that meeting industry faces in the future that should be catered to for ensuring the resilient and sustainable functioning of the industry. These risks are broadly considered into several dimensions i.e., economic, environmental, social, health-related, and technology-related risks that are broadly discussed paragraph by paragraph. These dimensions considered are complex and one causes rebound effects in the other dimension which is also explored ahead in detail.

The meeting industry is subjected to a range of economic risks that could impact its future success. The economic share of the industry could be measured by the revenue it generates per capita of the workers in the industry market. However, with rapid digitalization easing the feasibility of attending meetings that are either hybrid or remote, this may likely plummet the fair share of economic activity that was generated with in-person meetings. This situation is also a risk for the overall economy which is struggling to recover from pandemic effects and currently struggling to cope with rising fuel prices and inflation.

Environmental risks are a reality in a world that is coping with climate change. Newer regulations regarding sustainability transition pose two kinds of risks for the meeting industry which are transition risks and physical risks. Transition risks mean those interventions that the industry would have to undergo because of changing environmental regulations that affect the functioning of businesses e.g., carbon credit regulations etc. These risks would likely discourage carbon emissions for arranging events, the fair share of which comes when the participants travel to attend a conference. Therefore, this could also further pave way for virtual/hybrid events which would impact the growth of the industry. Apart from transition risks, physical risks are the risks that directly hamper the sustainable functioning of a growing industry by, for instance, extreme weather events and other environmental disasters that would result because of climate change.

Societal factors in the future would further pose crucial risks for the industry. The natural outlook of the industry to adapt to digital transformation and the push to embrace sustainability would certainly enable the newer way of virtually attending conferences, however, that would come at the cost of lower engagement and interactivity of the participants which may affect the effectiveness of the industry.

Furthermore, curtailment of meetings between people leads to loneliness which is a direct health-related threat which might arise in the future (Cacioppo et al., 2006).

Having extensively discussed digital transformation effects in the future of business-related conference industry future, it is imperative to mention that it all would open doors for several privacy and ethical risks. Cybercrime risk is a real threat to the sustainable functioning of the industry, especially for the virtual meetings that would happen on extremely confidential topics.

2.5. System structure of Austria's meeting industry

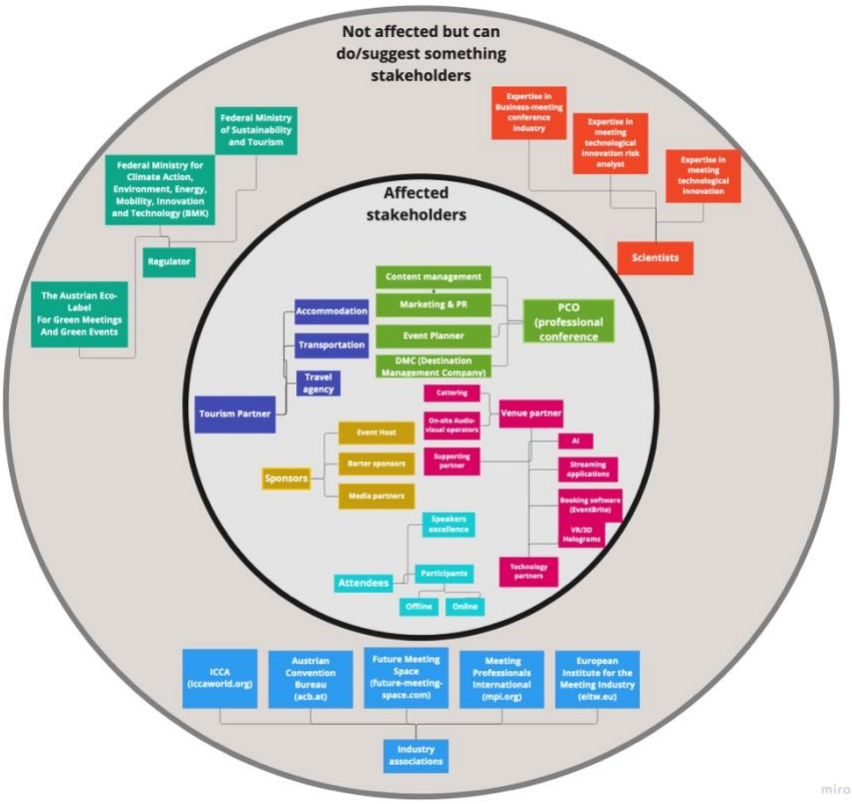

Figure 1 System structure of Vulnerability of Austria's meeting industry

The system structure of industry consists of two layers. On the outer ring as shown in Figure 1 System structure of Vulnerability of Austria's meeting industry consist of stakeholders, when threats happened, does not affected. However, these stakeholders might or have a big influence on intervention scenarios.

Policy makers, industry associations, and scientist are part of the system on this ring. Since the boundaries of the system is Austria's therefore regulators in this system are Federal Ministry of Sustainability and Tourism, Federal Ministry of Climate Action, Environment, Energy Mobility, Innovation and Technology (BMK), and The Austrian Eco-label and Green Meetings and Green Events. Albeit for the policy makers it is subject to the system boundary, Industry associations and scientists might come from international community. This is due the fact that there are also professional conference organizer (PCO) that operates internationally in Austria's conference. For Scientist, the justification to involve non only Austria's based researchers is because of the limited number of scientists in Austria that would cater three main expertise: Meeting technological innovation expert, risk analyst and MICE expert.

The core-layers are those stakeholders which involved directly on the business-related conference industry. These stakeholders are vulnerable to the threats or risks. Professional conference organizer (PCO) certainly will get affected by threats as they are the main actors to manage the conference. Sponsors of the event such as event host are on the inner core. This stakeholders might not lose in regards to financial, but they might lose in achieving their purpose to create an event if a threats or risks happened. Then, attendees also part on the inner core if the conference is annulled, postponed or happened. Lastly, a conference brings economic impact to other sector such as tourism, hotel, transportation, catering, hence, the supporting sector are part of this system. The supporting sector are divided into three categories which are tourism partner, venue partner and technological partner.

2.6. The current efforts to increase the resilience of Austria's meeting industry

2.6.1. Transition towards sustainability

As an effort to increase its competitiveness in terms of sustainability transitions, in 2010 the Federal Ministry of Climate Action, Environment, Energy Mobility, Innovation and Technology (BMK) has launched the Austrian Ecolabel for green meetings and green events. The label is a comprehensive set of standards serves as the foundation for ensuring that a meeting complies with various sustainability requirements. These requirements include offering environmentally friendly transportation options to and from the conference venue, reducing CO2 emissions through efficient on-site mobility, choosing eco-friendly accommodations, meeting requirements for the conference venue, catering, and exhibition stand

builders, procuring materials in a sustainable manner, managing waste in an environmentally responsible way, considering social aspects, and communicating about these efforts effectively. Professional congress organizer (PCO), event companies, event, happening or advertising agencies or event marketers can get the license (Österreichisches Umweltzeichen, 2018).

On international level, ISO 20121:2012 act as standard that outlines requirements for event sustainability management systems and provides guidance on meeting these requirements. The standard is intended for any organization that wants to establish, maintain, and improve its event sustainability management system and ensure that it aligns with its sustainable development policy. The standard is applicable to organizations that want to voluntarily demonstrate their conformity with ISO 20121:2012 through self-determination and self-declaration, confirmation of conformance by interested parties, or certification by an independent third party. The goal of ISO 20121:2012 is to promote sustainable practices throughout the entire event management cycle (ISO, 2017).

2.6.2. Technology in meeting industry

Technological interference has its impacts in cyberspace, not limiting by national borders (Goldsmith & Wu, 2006). Therefore, the impacts that the digital transformation is causing for the global business-related meeting industry are being replicated in the context of Austria. Rapidly coping with this shift, Vienna Convention Bureau has a dedicated team focused on helping to make hybrid and virtual meetings a success in compliance with its target of green meetings and sustainable planning (Vienna Convention Bureau, 2021). These efforts are expected to directly curtail the scope 1, 2 and 3 emissions caused for conducting meetings.

3. Method

3.1. Description and design

This research project follows transdisciplinarity approach which involves mutual learning processes between science and practice. Transdisciplinarity is a novel way of understanding and address a complex, wicked issues that involving collaboration among different parts of society and academia in order to meet complex challenges of society (Klein et al., 2001). Figure 2 shows the roles of stakeholders from

scientists, practitioners knowledge integration process in transdisciplinary process. The primary advantage of transdisciplinarity over other scientific or theory-practice approaches is the fusion or interconnection of diverse epistemologies, which are distinct methods of acquiring knowledge (Scholz & Steiner, 2015b). The result sets it apart from problem-solving methods, as socially robust orientation doesn't always require implementation, but it enhances the decision-making abilities of the stakeholders who participate in the process (Scholz & Steiner, 2015b).

The transdisciplinarity method consists of six phases. First is begin with triggering phase which are topic selections, framing the guiding questions, and expectations for all stakeholders involved in the process. The outcome from the first phase is the selection of topic: *Vulnerability of the Austria's meeting industry*. After the first step, the initiation steps are conducted to identify possible stakeholders in this selected topic. On the third step, facilitators start to narrow the guiding question with the time and system boundaries, listed possible threats, impact factors, and evaluation criteria. An impact factor, also referred to as a system variable or impact variable, is a variable that characterizes the current state and dynamics of the case. The technique of scenario analysis involves the development of a sufficient set of impact variables and their interconnection in a way that yields an accurate representation of the case. Scenarios may include qualitative and/or quantitative statements to describe the different possibilities (Takam, 2021). Meanwhile, evaluation criteria are a set of standards and values used to assess the merit, worth, significance, or value of an intervention, policy, program, or project, based on explicit or implicit goals, objectives, or purposes. Stakeholders' involvement in defining evaluation criteria is important to ensure their needs and values are considered. Evaluation criteria should not only reflect technical considerations, but also broader social and ethical considerations (Scholz, 2011).

Also still on the same stage, the selection of potential stakeholders still to select the relevant scientists and practitioners. The fourth steps consist of activity to engage and contact possible stakeholders to joining the transdisciplinarity process. Those who reject or confirm to contribute to the process are asked their opinion about the guiding questions, system boundaries, evaluation criteria, and impact factors.

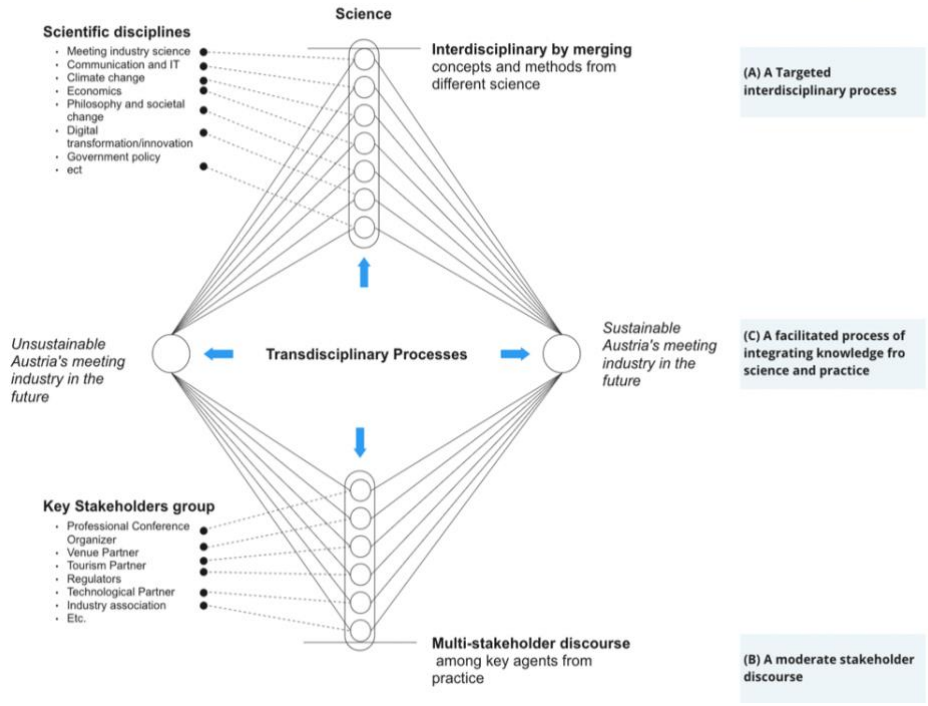

Figure 2 Transdisciplinary processes in integrating knowledge

Then the next step is the core phase where the stakeholders are gathering or so-called stakeholders conference. This phase is divided into two sub-phase, first conference and the second conference with in between the conferences, the facilitators will integrate the knowledge into scenarios using FSA x MCA (Formative Scenario Analysis and Multi-criteria Assessment). The Formative Scenario Analysis (FSA) is a scientific method used to develop clear assumptions and gain a deeper understanding of a particular case and its potential evolution. By creating a script of recommended steps for scenario analysis in response to the current state and potential future states of the case, FSA helps to generate different scenarios that depict alternative futures. These scenarios are used to explore a range of possible outcomes (Takam, 2021). Meanwhile, MCA is a decision-support method that enables stakeholders to assess the desirability of alternative actions or policies based on a set of criteria or objectives that represent different values, interests, or perspectives (Scholz, 2011).

The output from the first conference is the mutual or joint agreement about the guiding question, system limitations/representation, evaluation criteria, and impact factors. This output will be input for FSA

x MCA method where the facilitators will produce possible of intervention scenarios of the vulnerability of Austria's meeting industry. Meanwhile, the second conference output will be discussing the threat scenario and intervention scenario which will result in producing a socially robust orientation. On the six-phase, facilitators need to finish the reporting part and share the result to the stakeholders. Figure 3 sums up the six phases of transdisciplinary method (Scholz, 2017).

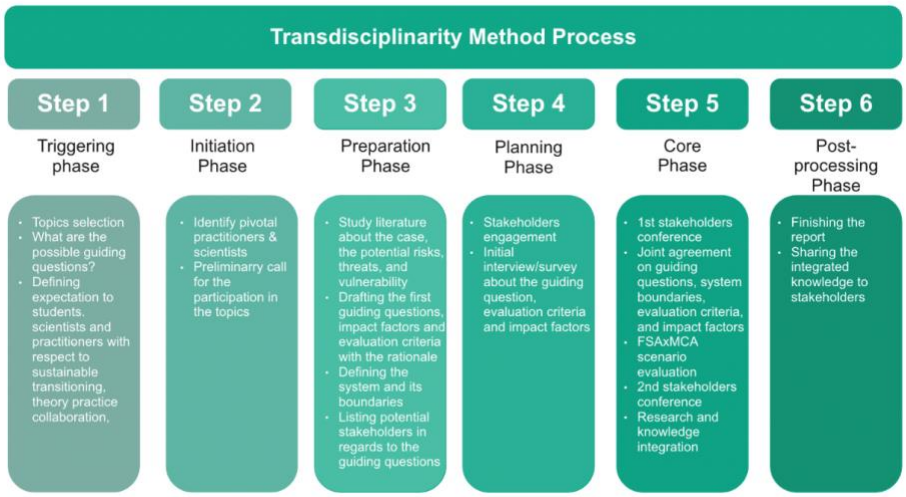

Figure 3 Transdisciplinarity Method 6 Phase

3.1. Guiding question and system representation boundaries

The guiding question describes the system and its boundaries. The limitation of system could be temporal, special, type of industry, and subject of interest. In this topic of vulnerability of Austria's meeting, the first version of guiding question is "**How can we mitigate the major risks which the business-related conference industry is going to face in Austria by 2030**?" This version focus on the possibility ways to mitigate major risks. Further, the facilitators narrowing down the system boundaries only to business-related conference industry as the conference niche itself is covering 10,402 events in Austria according to Austria Meeting Industry Report 2021. Regarding the time boundaries, the first version of guiding question choose 2030 with consideration of Austria 2030 masterplan.

After integrating the feedback from stakeholders, the guiding question evolve into “How can we mitigate risks and **leverage opportunities** of the **meeting industry** in Austria by **2030**?” The first change is additional to not only put risks as the subject of study but also to consider exploring opportunities. This suggestion was given by Mr. Gerhard Stübe from Austrian Convention Bureau and Dr. Günther Kainz scientist from Donau Universität Krems. Another alteration is on the scope of industry which become broader into meeting industry. The consideration to expand the limitations is delivered by Ms. Marie Lechner from Mondial to including scientific conference as this category cover the biggest event in Austria, Radiology conference. The argument to change the system boundary is also supported by Dr. Günther Kainz who recommend to also include event related to personal development. However, the scope of the meeting industry in the guiding question is limited based on number of attendees at least 100 people come to/be in Austria, and also number of days the event is held minimum 2 days considering one overnight for participant. This change is taking into account the feedback from Ms. Marie Lechner.

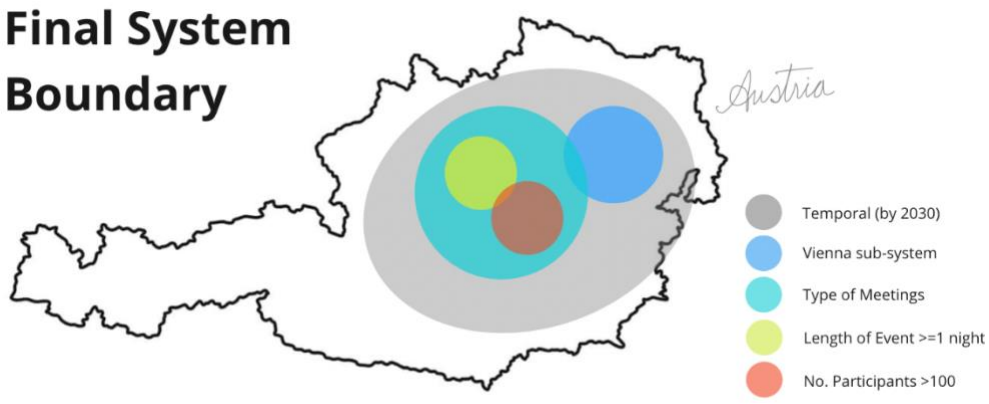

Figure 4 Final system boundary by 9 March 2023 after integrating feedback from stakeholders

Last modification is on the timeframe which once again coming back into 2030 after for a while is ten year. After the first iteration with facilitators ten years is selected to cater the need of generating a long-term knowledge. However, from the perspective of aligning with the current initiative that is running in the national-scale of Austria as well as international scale such us SDGs agenda, and taking into account the feedback from Dr. Günther Kainz, the time limitation is modified into 2030. Appendix 1 shows a table

which summarize the evolution of the guiding question. In regards the changing on guiding question, the system representation boundaries also change. Figure 4 present the illustration the current system boundaries as explained in the previous section.

3.2. Participants

After identifying stakeholders through stakeholder's map method. Key participating stakeholder groups are academia, and practitioners from technologies Partners, industry associations, PCO (professional conference organizers), also involving regulators. Table 1 show the list of stakeholders who join transdisciplinary process. The first stakeholders conference was done hybrid with on-site location at Donau Universität Krems on 14th March 2023. There are in total four attendances on the first stakeholders conference, two from scientist side and two from practitioners. The same type of conference was also conducted in hybrid mode at the same on-site location with three scientists and two practitioners.

Table 1. Participating stakeholders

No	Members practitioners	Organization	Role
1	Karin Stattmann	Austria Center Vienna	Practitioners
2	Gerhard Stuebe	KongresKultur	Practitioners
3	Marie Lechner	Austrian Convention Bureau	Supporters Practice
4	Wolfgang Suitner	Austrian Economic Chamber	Supporters Practice
5	Anna Burton	Austrian Institute of Economic Research	Scientists
6	Günther Kainz	Universität für Weiterbildung Krems	Scientists
7	Paula Rys	Universität für Weiterbildung Krems	Scientists
8	Michaela Schedlbauer-Zippusch	Austrian Convention Bureau	Practitioner
9	Christian Woronka	Vienna Tourist Board	Practitioner

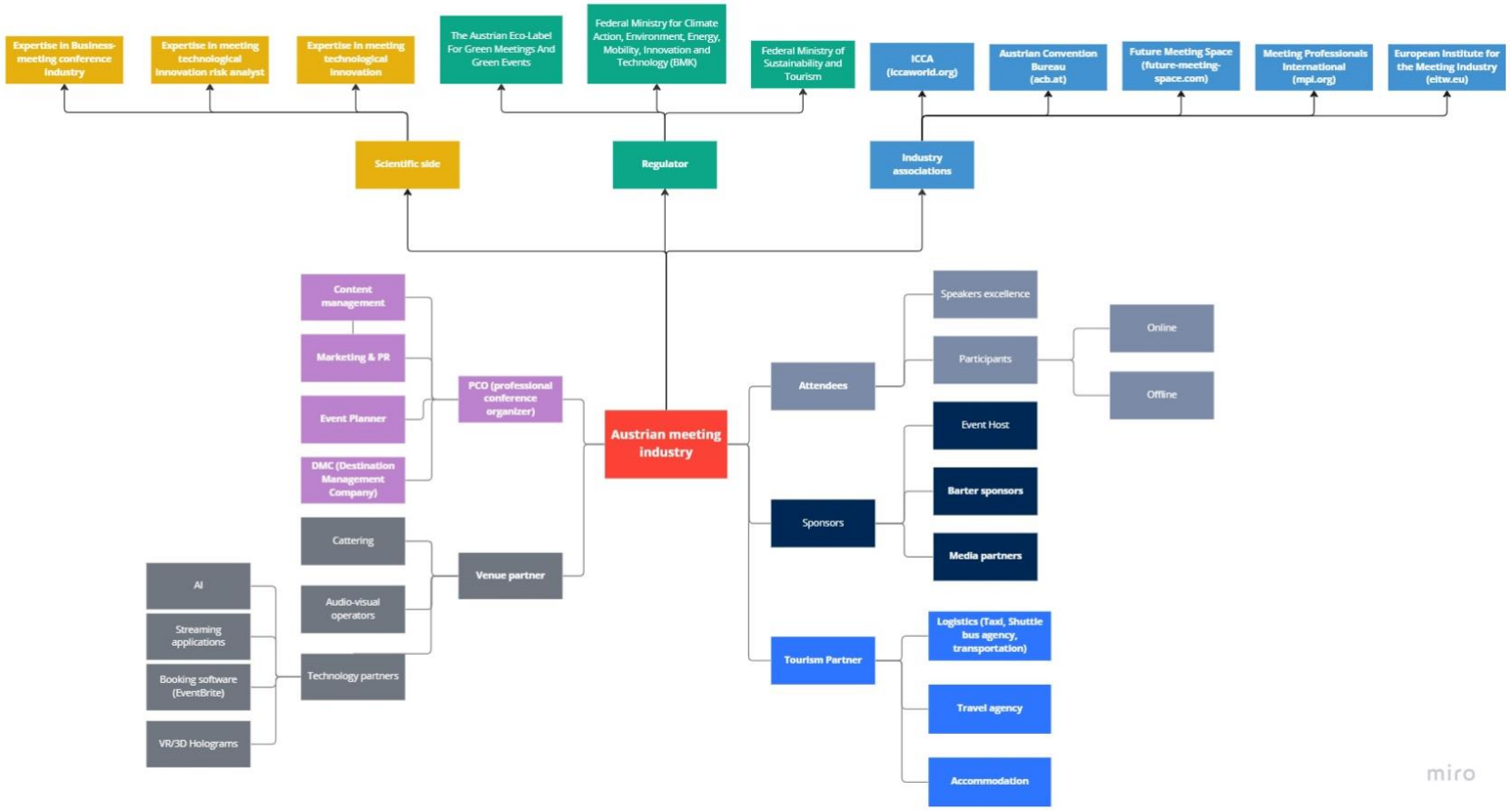

Figure 5 Stakeholders mapping of business-related conference meeting industry in Vienna

In total the facilitators have contacted 24 stakeholders consisting of 14 practitioners from different organizations and 10 scientists. In the end, 6 practitioners and 3 scientists agreed to join this transdisciplinary process. For the interest of transdisciplinary method table 2 documented the reason of stakeholders who give confirmation to not participate. Most of the reasons are due to time availability. Appendix 2 summaries the reason of those who decline for joining the transdisciplinary processes. In addition, Appendix 3 shows the profile of participating stakeholders.

3.3 Variables

It is essential to describe the considered system variables that are core components for defining the status quo and future state of the meeting industry, the details of which is thoroughly outlined in this section.

3.3.1. Impact factors of status quo

The following are the impact factors that are considered to define the status quo scenario. The table version is available on Appendix 4. In addition, Figure 6 explain the integration process of impact factors gathered from stakeholders from the first conference. Some of impact factors specially those related to economy become a good variable to identify threat scenario which will be discussed later.

- *Annual Participants Rating* is an impact factor bringing the social perspective of meeting industry functioning to light. It is evaluated considering the ranking of Austria as a conference destination for meetings, based on the surveys from the participants. The metric being judged is the Destination Performance Index (DPI) declared by International Congress and Conference Association (ICCA) in 2021, considering Austria as the best (rank 1) country for meeting destinations (Gopinath, n.d.). This impact factor was then divided into High (1) and Low (0) cases. High (1) is the case where Austria stays at rank 1 in DPI and Low (0) is the case when DPI drops below rank 1 for Austria.
- *Security Situation* addresses the ranking of Austria in the Global Peace Index. The high (1) mark of this impact factor states that Austria is in the top 4 ranks in the Global Peace Index and below that 4th rank is the low (0) mark (Vindobona, 2022).

- *Health System Ranking* addresses the ranking of Austria in the Global Health Security Index (Bell & Nuzzo, 2021). The high (1) mark of this impact factor states that Austria stays at or above rank 26 in the Global Health Security Index and below that 26th rank is the low (0) mark for this impact factor.

- *The number of Hybrid Meetings* as an impact factor discusses the technological advancements and tools that the meeting industry is integrating within its functioning. The high (1) mark for this impact factor considers that out of all the meetings that happen annually, at least 20% of them were hybrid meetings (Vienna Convention Bureau, 2022). On the other hand, less than 20% of hybrid meetings is the low (0) mark.

- *CO_2 Emissions* (Carbon Footprint) relate to the environmental aspects of the meeting industry functioning. For the current study, only scope 1 and 2 emissions are considered for simplicity. The high (1) mark for this impact factor states that the meeting industry emits more than 170 kg of CO_2e per day for its functioning. On the other hand, less than 170 kg of CO_2e per day emissions mark the low (0) case for this impact factor (The Company of Biologists, 2021).

- The *Number of Eco-labelled Conferences* also relates to the environmental aspect of the Austrian meeting industry. The Number of conferences that satisfy the requirement of ecolabel tags are being considered in the impact factor. The Austrian Ecolabel for "Green Meetings and Green Events" is the first national environmental label which allows the sustainable certification of the whole event. Specifically, the high (1) mark considers that there are equal to or more than 150 eco-labelled conference organizers that possess the tag/license of holding eco-labelled conferences. While the low (0) mark considers less than 150 organizers throughout Austria (ACB, 2014; BMK, 2023).

- The *Number of Employees in the Industry* caters to the economic outlook of the Austrian meeting industry. The reference figure taken for the status quo states that the meeting industry employs around 21,500 people throughout Austria (*Vienna Meetings Industry Statistics*, 2019). Therefore, the high (1) mark of this impact factor considers equal to or more than 21,500 people employed and the low (0) mark considers lesser of a number than 21,500.

- The *Number of Overnight Stays* also discusses the economic activity share of the meeting industry as it directly looks at the figure that how many individuals opted for a night stay in Austria solely to

attend a meeting/event/conference etc. The reference figure considered for this impact factor is 3.5 million night stays per year which was the number observed in 2018 (*Vienna Meetings Industry Statistics*, 2018). Therefore, the high (1) rank for this factor considers equal to or more than 3.5 million people opting for night-stays and the low (0) rank considers a lesser number than 3.5 million.

- *Accessibility of Austria* as an impact factor deals with the attractiveness of Austria as a meeting destination. Despite having a central location in Europe, it is important to look at the infrastructure easing the connectivity of Austria with other countries and within its boundaries as well. Therefore, the public transport infrastructure is considered for this and the associated spending that people undertake for it, which is noted as 5 billion Euros per year (Statista, 2021). The high (1) rank would be either an increase in spending than 5 billion or the number stays the same. Whereas the low (0) rank states a decrease in spending than 5 billion. It is important to note that in both cases (high and low), the spending shall be measured by adjusting to inflation in the future.

- The *Expensiveness of Austria*, in this impact factor, is being measured by the world cost of living index for countries where it currently stands at rank 25 (Wise Voter, n.d.). The high (1) case for this impact factor considers this rank to go even higher or stay the same. On the other hand, the drop in the ranking below 25 would be the case for the low (0) side case.

3.3.2. Evaluation criteria

Evaluation criteria are the standpoints from which the performance of the system is measured, simply speaking, they can be regarded as Key Performance Indicators (KPIs) for the considered system, which in this study is the meeting industry of Austria. A total of six evaluation criteria were set in this study, which are shown in Appendix 4, and the names and details of which are explained in the following bullet points.

a. The *societal* outlook of the meeting industry was considered to overall cater to the participant-centered approach on ensuring their engagement, satisfaction, and tourist activity etc. It is a key component in measuring the performance of the meeting industry as participants are at the core of the meeting industry being the customers in focus, which is why they have been included as a baseline in our considered system.

b. The *safety* situation of Austria is another evaluation criterion that deals with the general level of Austrian national security (relating to crime rates), internal and external Austrian political stability and lastly the health system emergency preparedness.

c. *Technology tools* Integration is a way forward, and therefore, it is also considered as another evaluation criterion for the system considering a rapid increase in digital tools integration for the meeting industry has been observed in the post-pandemic world.

d. The *Environmental Impact* of the meeting industry is also considered as a KPI/Evaluation Criteria for it being of much importance in contemporary times where the need to move towards sustainable ways of functioning is imperative to counter the menace of climate change. This is the reason why environmental impact is also considered as a criterion to evaluate the system's performance.

e. The *Economic* factor is the core of the meeting industry, which could be considered as a driving engine for the meeting industry function which is the reason why it is also taken as a criterion to evaluate the system.

f. Lastly, the attractiveness of Austria as a destination for hosting meetings is also considered as a criterion to evaluate the system as this criterion can either specify competitive advantages/disadvantages that the industry could face considering different performances and outlooks of the meeting industries of the neighboring countries in Europe.

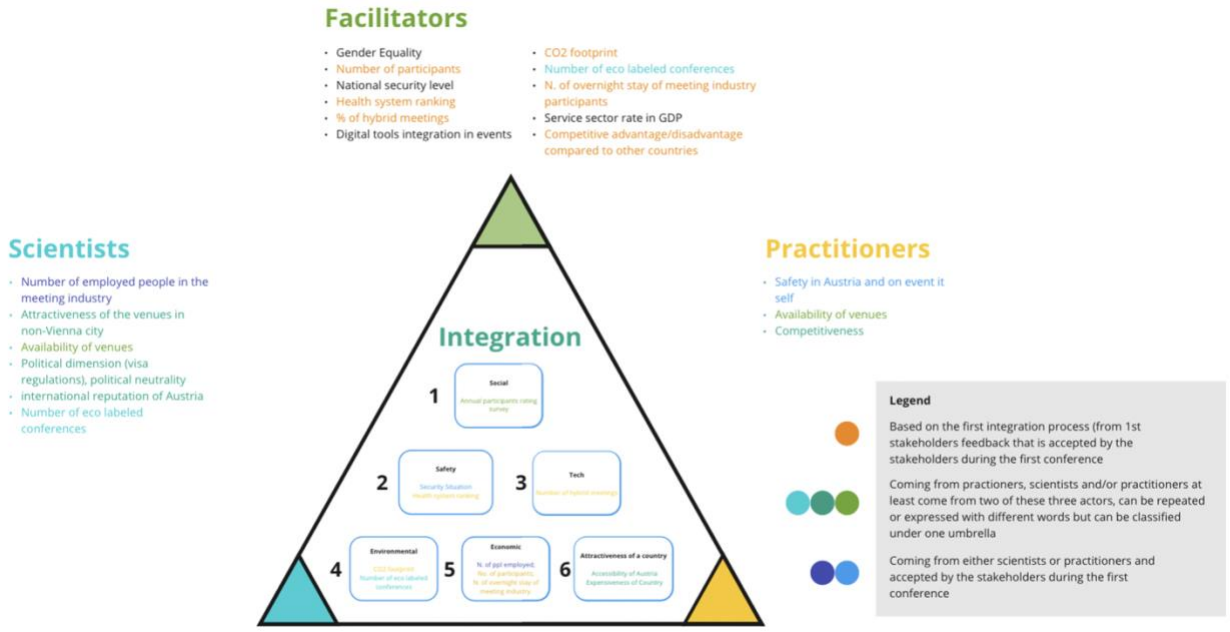

Figure 6 Integration of impact factors from stakeholders

3.3.3. Threat variables

To proceed further ahead to depict a socially robust orientation of the Austrian meeting industry in the future, the threat scenarios and threat variables were crafted. Later, for these threat scenarios, interventions were introduced that are discussed in the upcoming sub-topic. Discussing the threat scenarios, three consistent and likely threat scenarios were developed using FSA and MCA assessment. For these threat scenarios, threat variables were considered that are denoted from b_1 to b_5. Each of these threat variables have two threat levels (r = 1, 2), whereas r = 1 shows the low threat level and r = 2 shows the higher threat level posed. Following are the threat variables considered with respective threat levels (r = 1, 2). Appendix 5 listed all threat variables with the scenarios.

- *b1 - Threat for the number of overnight stays*: There could be various reasons for which this number could drop directly affecting the core of the meeting industry i.e., its economic potential. Respectively, low risk (r = 1) for this variable corresponds to equivalent to or lower than 20% drop in overnight stays and high risk (r = 2) would be true for a drop ranging from 50% to 20% in the overnight stays.

- *b2 - Threat for the number of employed people*: This threat also would affect the economic potential of the industry. Respectively, low risk (r = 1) for this variable corresponds to equivalent to or lower than a 5% drop in employees of the industry and high risk (r = 2) would be true for an employee reduction ranging from 5% to 9.5% or more.

- *b3 - Threat for the quality of industry talent*: There could be a possibility that the professionals move out from Austria for several reasons, and in that case, this threat scenario would become true and that would have layered consequences for most of the evaluation criteria being set for the system. Respectively, low risk (r = 1) for this variable corresponds to not many people (experts) leaving Austria and high risk (r = 2) would be true for a higher number of people migrating away from Austria for several reasons.

- *b4 - Threat for technology integration with hybrid meetings*: It is important to embrace change, and digitalization is the change that the industry should adapt to for staying competitive. Respectively, low risk (r = 1) for this variable corresponds to equivalent to a bit below 20% of meetings happening in hybrid mode annually and high risk (r = 2) would be true hybrid meetings share well below 20% in total.

- *b5 - Threat to tourist spending on vacations*: It was unexpected, to most, that the tourist spending on vacations for Austria would hugely drop in 2020 and 2021 which primarily happened because of Covid-19. However, the threat is still likely that this may happen again, for any reason whatsoever. Therefore, respectively, low risk (r = 1) for this variable corresponds to equivalent to or lower than a 10% drop in the spending and high risk (r = 2) would be true for a spending drop ranging up to 50% in a year.

3.3.4. Bundles of intervention analysis

This sub-section deals with the interventions that have been designed or proposed by collaborating with all the relevant stakeholders under the umbrella of transdisciplinary process to cater to the threats/risks described in the previous section. It is important to once again note that interventions are introduced to potentially increase the adaptive capacity of the system that makes functioning of the system more sustainable and resilient. The following interventions are suggested catering to the risks/threats identified for the meeting industry.

- It was deemed necessary to increase the quality of the meetings arranged by the industry so that the societal threat could be avoided or worked upon. By increasing the quality of the meetings, participants would most likely be satisfied that would not just impact the societal aspect but would have ripple effects in other dimensions as well. For instance, an indirect benefit of this could further propel the economic performance of the Austrian meeting industry considering that if participants are happy and contended with the quality of conferences.

- Several discussions about competitive advantage/disadvantage of Austria have already been covered. Considering that, an intervention regarding introduction of Business Intelligence tools to monitor the competitor (other countries) innovation would keep Austria ahead of the curve and shall likely make it keep the rank 1 for being the best place for meeting destinations.

- It was also concluded that increasing the share of hybrid events would increase the competitive advantage of Austria over other countries' meeting industry. For that, taking necessary actions to promote them as the new way of doing things was considered essential for people to embrace it properly.

- For further increasing the accessibility of Austria, increasing the number of international airports would help a lot considering that the meeting industry is too concentrated just in Vienna. However, this way, the overall economic potential of Austrian meeting industry would also rise apart from it becoming more accessible which is desirable.

- Capacity development of employees of the meeting industry was also deemed important for the long-term resilient functioning of the industry as that would help employees with their wellbeing, not just with their profession but on personal side as well.

- Development of formal platforms to provide education to both the participants and PCOs on how to arrange a sustainable conference is considered necessary to forestall the environmental threats. Specifically, all the stakeholders involved in the meeting process should be given the education about green meetings and eco-labelled conferences as that would help them mend their behaviors towards the sustainable approaches eventually curtaining the CO_2e emissions of the industry.

- Increasing the number of eco-label license holders by allocating subsidies by regulators to solve environmental issues related to meeting industry is considered very important to propel the sustainability transition push. Furthermore, climate coalition development would also boost eco-label license holders which is important to be developed as it would reduce the greenwashing practice in the meeting industry.

- Developing several train line connections throughout Austria so that the cumulative carbon footprint of the meeting industry could be curtailed.

4. Results

The transdisciplinary project/study is not necessarily a way to provide solutions to the problem at hand but rather provide concrete knowledge-based directions for the future. This is to allow stakeholders to integrate this new knowledge into their work spheres. Hence, in the crux, the results of this process are Socially Robust Orientations (SOROs). Socially Robust Orientations (SOROs) are a collection of principles or values that guide individuals and organizations in making socially and environmentally responsible decisions and actions. These orientations aim to promote sustainable development and tackle complex societal issues through an emphasis on collaboration, participation, and learning (Scholz, 2011). To contribute to this general goal, the following sub-results were the outcome of this paper's study.

4.1. Impact variables

The impact variables were imported into the FSA tool so that the facilitators can give each of the individual scenarios a consistency score: 0, 1, or 2. Following is a description of the meaning of each:

- 0 – A score of zero meant neither of the two Impact factors conditions have any impact on each other and will not be present in the same scenario.
- 1 – The score of 1 depicts that consistency exists between the two states of impact variables and the possibility of them co-existing is also there.
- 2 - This score shows a higher consistency and possibility of the two impact factors being present at the given time.

In such way, the following table was filled based on the current available knowledge. Based on this populated impact matrix, the FSA tool generated top 20 most consistent scenarios based on 0's (Impact Factor lower than the threshold in the scenario) and 1's (Impact Factor lower than the threshold in the scenario). Consistency rating plays a crucial role in ensuring that the FSA-based scenario analysis model accurately represents the dynamics of the system being studied and provides valuable and applicable insights. When the model is internally consistent, it becomes easier to identify plausible and sustainable pathways and outcomes, while avoiding those that are less viable or undesirable. Therefore, internal consistency is an essential factor for creating a reliable and effective scenario analysis model. Below is the scenarios table that depicts the consistency scores of the generated scenarios. Appendix 6 demonstrates the process of weighing the impact factors into the FSA tool.

Table 2 contains data about consistency rating per scenario. Each scenario is constructed by impact factors. 0 means the low possibility might happened and 1 is vice versa. For example, on scenario 7 (S7), impact factor Annual participant rating is 0 which is in this scenario it is predicted the participant's satisfaction will lose the 1st rank on the survey compared to other countries (see section 3.3.1 or Appendix 4). The black block on table means degradation of system variable, while the white block shows improvement of system variables or impact factor in the future. Nevertheless, it is not feasible to evaluate and analyze all 20 scenarios with the stakeholders and gather their expert opinions on them. Therefore, the team filtered the 3 scenarios based on their realistic and probabilistic traits derived from the

knowledge from the past workshops and stakeholder feedback. The selected threat scenarios were S3, S7 and S14.

Table 2. Scenario Consistency matrix

Evaluation Criteria	Societal	Security		Tech	Environmental		Economic			Attractiveness		consistency score
Scenarios	**Annual Participants Rating**	**Security Situation**	**Health system Ranking**	**No. of Hybrid meetings**	**C-Footprint**	**No. of Eco labelled conferences**	**No. of Employed ppl in the industry**	**No. of Event participants**	**No. of Overnight Stays**	**Accessibility of Austria**	**Expensiveness of Austria**	
S7	0	1	0	0	1	1	0	0	0	0	0	65
S14	0	0	1	0	1	0	0	1	1	1	1	60
S17	0	1	1	0	1	1	0	0	0	0	0	58
S3	0	1	0	1	1	0	1	1	1	0	1	68
S1	1	1	0	0	1	1	0	1	1	0	0	70
S5	1	1	0	0	1	0	0	1	1	0	0	67
S10	0	1	0	0	0	1	1	1		0	0	64
S12	1	1	0	1	1	1	0	0	1	1	1	61
S13	1	0	1	1	1	1	0	1	1	0	1	61
S15	1	1	0	1	0	0	0	0	1	0	0	60
S18	1	1	1	0	1	0	1	0	0	0	0	57
S19	1	0	1	1	1	0	1	0	0	1	0	53
S6	1	1	1	0	0	1	0	1	0	1	1	66
S2	0	1	1	1	1	1	1	1	1	1	1	70
S9	0	1	1	1	1	1	1	1	0	1	0	64
S16	1	0	1	1	0	1	1	0	1	1	1	59
S4	1	0	1	1	0	1	1	1	1	1	1	67

The chosen scenarios can be translated as follows:

Scenario 1 (S7). Vienna loses its 1st ranking position as a top conference destination even though Austria stays in the top 4 ranks in the Global Peace Index for being safe. Austria's ranking plunges below rank no. 26 on Global Health Security Index. The involvement of Hybrid Meetings in Austria stays below 20% and the meeting industry emits more than 170 k of CO2/conference in a day for its functioning despite having more than 150licenseholderss of eco-labelled meetings. In Austria, people employed by the meeting industry sum up to a total of less than 21,500 which are hosting less than 2 million participants annually for events that cause overnight stays of less than 3.5 million people annually. Furthermore, household spending on public transport reduces and is less than 5B Euros, whereas Austria is getting less expensive as its place for expensive gets lower than 25th rank in the World Cost of Living Index.

Scenario 2 (S14). Vienna lost its rank as the 1st conference destination, Austria ranks on Global Peace Index and Global Health Security Index also decreased from 2021, which are 4th and 26th respectively. The involvement of Hybrid Meetings in Austria stays below 20%. Moreover, the Co2 emissions increase to beyond 170 kg per day of the conference. In addition, the number of eco-labelled meetings also decreased to less than 160 license holders. However, the industry shows a great performance in the economy with more than 3 million and a half overnight stays happening because of the meeting in Austria, and more than 21500 employees working in the meeting industry. Also, the industry manages to host more than 2 million attendees on-site. On the other hand, the attractiveness of the country might decrease because of the reduction in household consumption for transport which reaches 5004 million euros per year. Further, in this scenario, Austria lost its ranking as the 25 cost of living which implies that the country is more expensive than before.

Scenario 3 (S3): Participants have low satisfaction with events (Vienna loses 1st rating position for conference destination - less competitiveness), the political situation is stable (security situation remains in top-4 global peace index) but the health system is not adapted to new pandemics/their workload (less than 26th position in Global health security rating), technology is being implemented to industry and hybrid meetings are increasing (more than 20% are hybrid), environmental risks are not addressed (CO2 emissions per conference day and there are <150 ecolabel license holders), meeting industry job market is increasing (>1,500 employees in the meeting industry), the number of participants (>2 million yearly)

and their overnights are increasing (> 3,5 million overnights yearly), accessibility (<5004 million euro public transport spending) and expensiveness of Austria is increasing (>25 places in world cost of living) so Austria loses attractiveness for events in long term.

4.2. Evaluation on threat variables

Based on the developed future threat scenarios, the facilitators conducted the second conference with the relevant stakeholders and gathered their opinions on the credibility of the scenarios. Most of the stakeholders, when inquired after discussion, said that the third scenario (S3) is the most robust and "possible". Deriving from all the learnings from the meeting, the facilitators then generated the graphical representation of the evaluation criterion of each threat scenarios based on their judgements. This process is also called MCA (Multi-criteria Assessment).

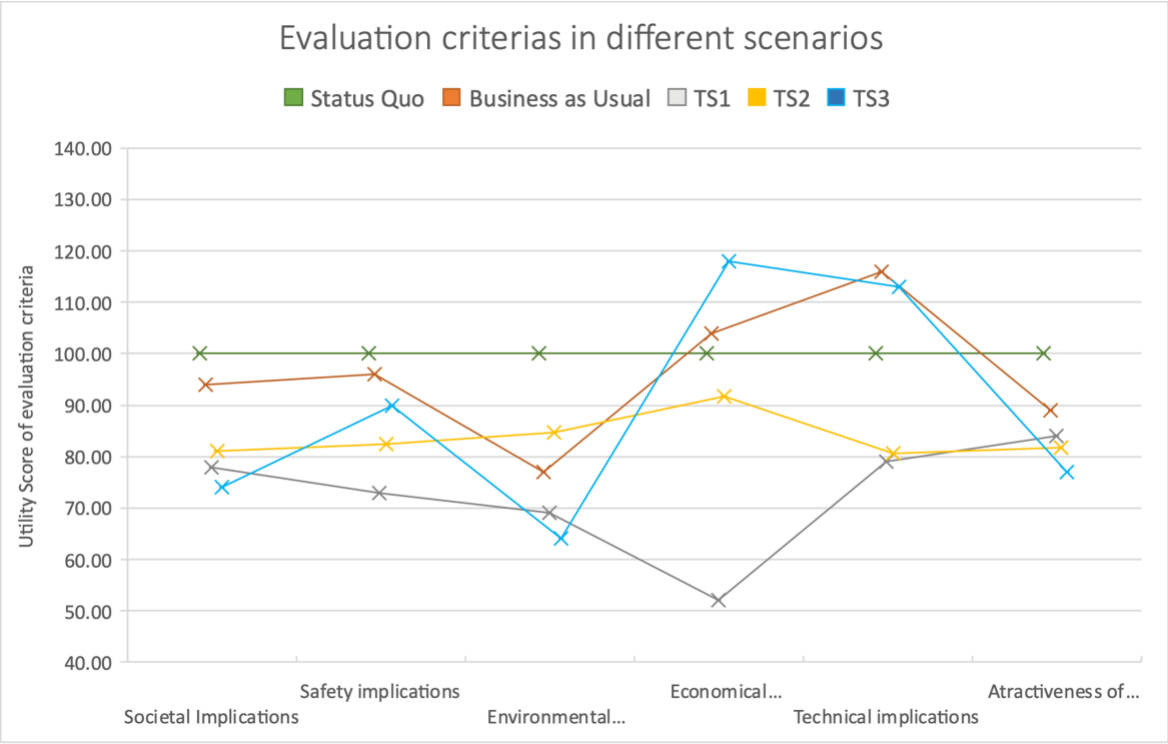

Figure 7 Evaluation Criterion Scenarios

The green line on the graph serves as the reference which is the status quo of the Austrian meeting industry whereas the rest show changes of the evaluation parameters after 7 years in 2030 for each threat

scenario. The utility score for all status quo are values by 100, threat scenario that could affect evaluation criteria very bad or being evaluated as worsening in that evaluation criteria will be valued 0-99. On the opposite the score of scenario on each evaluation criteria can be above 101 to 200 if in that scenario, the system get better on a particular criteria. The Threat Scenarios (TS) are analysed in no particular order. This graph is to be understood in a comparative way: How each evaluation criteria (x-axis) behaves in each of the scenarios (coloured lines). Hence, it serves as a base for comparison of individual evaluation criteria.

It can be seen that if business as usual (red line) continue without any disruptions, the system will a bit suffer with environmental issue which also has correlation with Austrian's industry attractiveness compared to other neighbouring country. A quite similar pattern could also happened for the third scenario where the environmental issues are getting worst, and social implications also face deterioration. This could be happened when competitors country are way more advance in giving an excellent service with innovation to customer and become more attractive. Although the economy going well in this scenario, the attractiveness of Austria's meeting industry is on the lowest point which not a good sign for long-term business. Furthermore, threat scenario 2 (yellow line) shows a rather risky possibility where system evaluation on safety get worst and the economy implication of the system not doing well compared to the status quo. This could be happened if the current geopolitical tension on the continent escalated into the wrong direction or another catastrophe happened again like covid-19 pandemic. Scenario one and two show similar pattern unless the economical implication of the system in scenario one much more in danger. Experts advocates that scenario 2 is more or less a transition phase from status quo to scenario one.

4.3. Adaptive capacity rating

Adaptive capacity is defined as the system's ability to withstand the risks and to which extent it can adapt. Therefore, as intervention scenarios were mapped semi-quantitatively onto the possible threat scenarios 1,2, and 3, the facilitators marked the weight of each evaluation criterion according to intervention scenario for each threat scenario with 100 being the status quo's reference score. This number was assessed by the facilitators according to how well the intervention criterion could reduce the threat. The adaptive capacity rating for each threat scenario was calculated based on the proportion of

adaptive capacity of each intervention scenario extracted by the adaptive capacity of business-as-usual scenario. The graph depicting this with vulnerability and risk is shown on figure 9.

4.4. Vulnerability scores/graph

Vulnerability is defined as the risk which cannot be avoided by the system despite the adaptive capacity. It is mathematically written as

$$Vul = R * (1 - AC) * 100,$$

where Vul is vulnerability, R is the risk, and AC is the Adaptive capacity of the system. Based on the weightages and averages of the scores given to the evaluation criterion, the following graph was generated. Risk was derived from the overall utility score of threat scenario compared to overall of utility score of business-as-usual scenario.

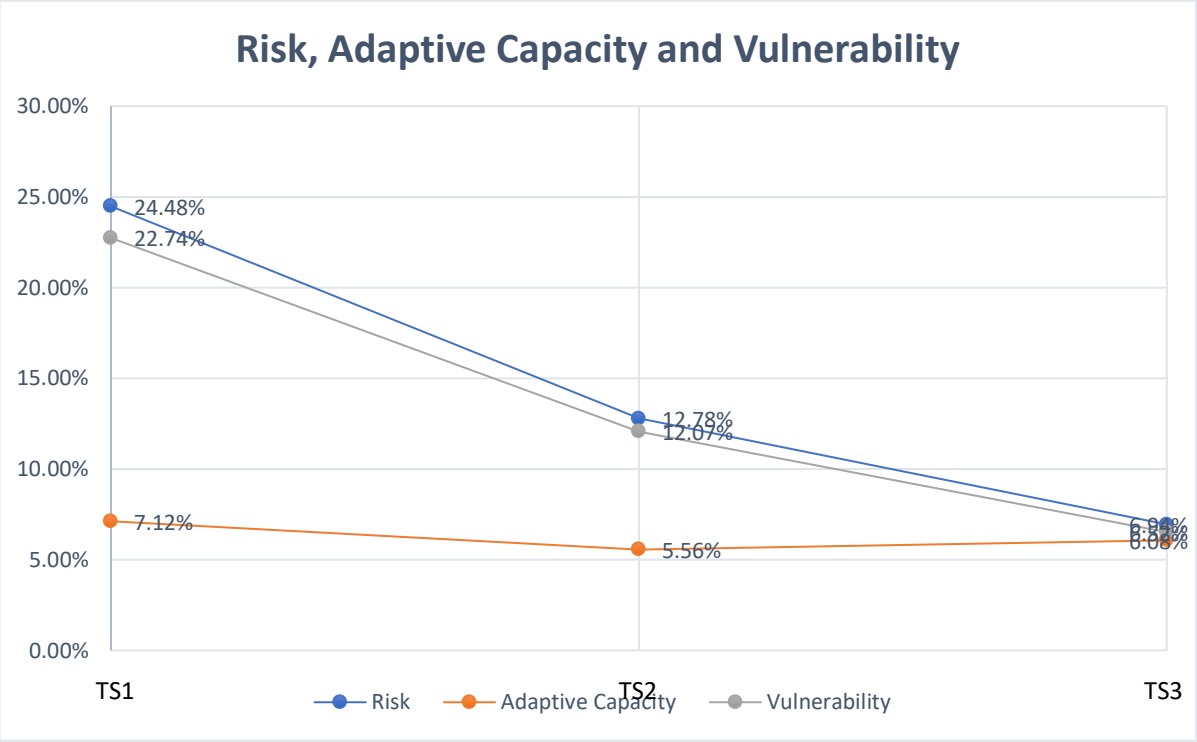

Figure 8 Risk, Adaptive Capacity and Vulnerability of Threat Scenario 1, 2, and 3

The first data point on the left consisting of three parameters shows TS1. Whereas the middle one shows TS2 and the right most point shows TS3. It is important to clarify that the scenarios are placed in no particular order. Therefore, this graph does not depict any trend but rather a comparative view between the threat scenarios. The first threat scenario possess the highest risks among all, but has the highest adaptive capacity too compared to others. On the other hand, threat scenario 3 has less risks than others. However, the threats scenario two is the least adaptive capacity scenario.

5. Discussion and interpretation

Faced with the adverse consequences of the Covid-19 pandemic and war in Ukraine, the Austrian meeting industry needs to address appealing environmental, safety, and technological issues. Therefore, the industry needs to transform to keep Austria in the leading position of conference destination in Europe. This transdisciplinarity research discovers the key vulnerabilities and main transformation actions for the meeting industry to take within the next years to keep high competitiveness and implement sustainable practices.

This study has potential limitations. Firstly, although there was a big variety of experts from different sides of the meeting industry system, there are still other alternative perspectives and more inputs to be brought. Secondly, bringing in mind the complexity of all social institutions, among the 11 impact factors on the meeting industry facilitators identified, there are many other possibilities to be considered. However, the transdisciplinarity methodology aims to structure the future for better forecasting and limit the impact factors to 12. Thirdly, the integration of expert feedback should be ethical, avoiding misinterpretation and misinformation.

To answer this question, facilitators invited leading experts from science and practice to find suitable solutions and integrate their knowledge. In total 9 experts (3 from science and 6 from practice) took part in this study. Facilitators have collected their written feedback on research design – guiding question formulation, evaluation criteria and impact factors, and organized 2 conferences where the first one facilitator discussed meeting industry model, and system boundaries, and summarized impact factors/ thread variables, and later, the second one facilitator explore business as usual and future scenarios. Their feedback and knowledge facilitators were considered in all stages of the research.

Following the guiding question, facilitators analyzed the Austrian meeting industry as a system to define all potential risks which could be mitigated. After a brainstorming session with the facilitating team and considering the expert's input, facilitators detect economic, social, safe, technological, environmental, and reputational evaluation criteria which serve as a base for system modelling and scenario construction and crisis preparedness evaluation. Considering them, facilitators identify the measurable impact factors which are listed as follows: Societal (Annual participants rating survey), Safety (security situation, health system ranking), Tech (number of hybrid meetings), Environmental (CO_2 footprint, number of eco-labelled conferences), Economic (number of overnight stay of meeting industry participants, number of employed people in the meeting industry, number of event participants annually), the attractiveness of a country (accessibility of Austria, expensiveness of Austria) – 11 in total.

Figure 9 Impact Factors

Using the FSAxMCA methodology, facilitators developed possible 20 scenarios of future Austrian meeting industry development if all or some risks are undertaken. Based on the thread variables, facilitators have identified the most consistent 3 thread scenarios. In collaboration with experts, facilitators created a list of intervention actions to take until 2030.

Overall, experts find technological and health risks the least dangerous for the industry since there are enough investments into technology and innovation in hybrid meetings, and the health system is rather developed compared to other European countries. Hybrid meetings will become a "new fashion" of the meeting industry since it offers higher connectedness and become one of the main competitive advantages in the next 7 years. Although Austria has a profitable central position in Europe, the advanced and more accessible transportation system will also contribute to strengthening the meeting industry's competitiveness. International connectedness by airports and more sustainable train system development

would ensure participants' satisfaction with accessibility. Lastly, one of a few actions the meeting industry could take itself to become greener is eco-labelling implementation on regular basis. All these actions are also bringing the need to train the PCOs for new necessary competencies for the organization of sustainable and flexible events. Hence, environmental and staffing qualification challenges are considered by experts to be priority intervention actions to be done within the next years.

Considering the experts' input and Austrian context, facilitators weighted the threats and found that economic and technological indicators are highly dependent on the scenario or rather industry development direction (evaluation criteria range is 50-120 and 80-115 correspondently, status quo is 100). Meanwhile, the rest of the evaluation criteria such as Austria's attractiveness, social, safety, and environmental are going to reduce or in other words worsen than today if no intervention actions are taken (the range is 65-95 across categories, status quo is 100). The complexity of issues meeting industry is going to face next 7 years and are needed to address to keep the current size or even improve points to the need to develop an umbrella of intervention actions or solutions where the transdisciplinarity approach has great potential.

6. Conclusions

Socially Robust Orientations

After years of incipient rather elitist use, a great blooming of the Austria's meeting industry occurred when cheaper and accessible transportation reached the masses. This bonanza scenario has been the case until climate change, increasing the awareness of the impact of traveling and the COVID-19 crisis, questioning our way of living, appeared into the scene. The transdisciplinary (Td) approach to the meeting industry in Austria has been revealed as a compelling and needed strategy to tackle challenges for such a dynamic sector. The strong social oriented factor of this business and its strong adaptive approach, more importantly the recent complex, wicked problems in this industry due to covid-19 pandemic make Austria's meeting industry a perfect candidate for transdisciplinary project.

Heavily based on the value of intangible live human experiences, the meeting industry addresses current crisis with a strong emphasis on this factor that makes it unique, but open to innovation and change. With uncertainty in front of us and big critical challenges that affect us globally, it is good to see

how "meeting" and connecting humans can define a safe scenario to bring solutions. What advice, opinions, comments, and call to action can be considered after such an elongated methodology?

Furthermore, the socially robust orientations (SOROs) to reduce the vulnerability of Austria's meeting industry is that missing an opportunity to be the leading on green meeting industry could affect the attractiveness of the country. Further, technology implications, the advancement for the future of hybrid mode meeting need to be considered not only to be better than the other destination country but also to prepare for unpredictable catastrophe events in the future. These two criteria are strongly correlated with the quality of human resources in this industry which will play an important role in navigating the success of Austrian's meeting industry to be resilience by 2030. Another crucial point to be considered as orientation is to improve accessibility to Austria as international hub and to enhance the interconnection between cities in Austria. This will strengthen Austria's position as international meeting point in Europe and at the same time promote a prosperous meeting industry niche for domestic customers which will improve the system resiliency. If there is no intervention take place to improve the system for the next seven years, Austria's attractiveness, social, safety, and environmental are highly going to worsen than today's which in all the two biggest threat scenario TS1 and TS2 show a dramatic jump of economical implication of the industry.

Agreed by all stakeholders, there are several recommendations that the Austrian meeting industry needs to improve its public narrative to better explain what its nature and the impacts that industry bring to Austria as nation and as society. Moreover, the industry is suggested to explain the public authorities its way of working to be considered as what it is, to avoid confusion where a mitigation of unpredictable events such social distancing during the pandemics harmed the industry severely, to present the potential markets the virtues of Austria with its cutting-edge meeting capacity. Further, to engage further Austrian society, scientifical and practitioners to keep evaluating and working for the success of this leading industry.

Facilitator's take a way

Three are the main outcomes of this learning process. First, the personal learning in the introduction to this method and the development in soft skills. On top of that, the immersion into the Austrian meeting industry, digging deep into the industry strength, weaknesses, opportunities, and threats. Understanding

the status of the meeting industry and what the practitioners and scientists think about the industry giving lots of knowledge and lesson learnt. Moreover, the relationship with stakeholders is another outcome. In hope, the networking between stakeholders could open bigger discussion for Austria's meeting industry. Lastly, the most important outcome is Social Robust Orientations (SOROs) as a result which can be a guidance for stakeholders in their decision-making process for the future of their industry.

Regarding our introduction into Td, we can say as a group that we are gladly surprised on how in just 4 months, our understanding diving into this strategical methodology has improved. Td has taught us a lot about the ways knowledge is organized in our current societies. Under this historical moment, where knowledge is so vast and no single person, as it could occur in the past, is to have all the information of no subject, raising collective discourses and co-joint mixed strategies seems a very bold approach. Under complexity and socially heavily critical periods ahead of us, to have experienced transdisciplinary makes us proud of understanding why this instrument may be an addictive tool to scrutinize complex societal problem.

Working as a team being it so diverse and multidisciplinary has meant a huge richness at the personal level. Languages, cultures, and ways of seeing the world, sometimes matching, and sometimes argued, supposes a great critical thinking perspective into life. Caring, building bridges, and understanding the other during the whole route are beautiful consequences as well. On top of that, having the chance of meeting some of the top members of such a fast driven sector as the meeting industry one and having the chance to grow thanks to them via the Td process leaves a lot of lessons in our skin. Persuading stakeholders, publicly presenting our approach, gaining their confidence, and joining them on board has been some of the main challenges overcame during this experience.

Lastly, we would like to extend our sincerest gratitude to all the stakeholders who have joined us in our transdisciplinarity process. Your participation, feedback, and discussions have been invaluable in shaping our socially robust orientation based on the transdisciplinarity method. Your insights and contributions have helped us create a more comprehensive and effective approach to tackling complex challenges, and we are incredibly grateful for your time and effort. Together, we have created a powerful asset for the industry to keep moving forward and become more resilient and stronger than ever before.

We believe that our transdisciplinary approach will help us navigate the challenges ahead and create innovative solutions that benefit us all.

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Appendix 1.

Table of the history and justification of guiding question transformation

Version Nr.	Date	Guiding question	Who modified why?
1	11th Dec 2022	How can we mitigate the major risks which the business-related conference industry is going to face in Austria by 2030?	5 years because the industry is dynamics from practitioners side (Dr. Lukas Zenk)
2	14th Jan 2023	How can we mitigate the major risks which the business-related conference industry is going to face in Austria in the next ten years?	Input from facilitators and professors to change the time frame into 10 years for knowledge purpose. The second input was to be narrowing down the industry into business related conference.
3	3rd March 2023	How can we mitigate the major risks and opportunities which the business-related conference industry is going to face in Austria in the next ten years?	Input from Mr. Mag. Gerhard Stübe (Stakeholder) to look on the flip-side of this study and not only the risks.
4	8th March 2023	How can we shape an extraordinary meeting experience (by mitigating risks and by using opportunities) for the business-related conference industry in Austria until 2030?	Dr. Gunther Kainz mentioned that Meetings for different professional groups such as doctors or the pharmaceutical industry are now in the guiding question with the focus on business-related conferences. Maybe it would be helpful, also to include conferences more related to personal development.
5	8th March 2023	How can we mitigate the major risks which the meeting industry is going to face in the next ten years?	Ms. Marie Lechner - to take more broad system boundary to the guiding questions "How can we mitigate the major risks which the meeting industry is going to face in the next ten years?"

6	9th March 2023	How can we mitigate risks and leverage opportunities of the meeting industry in Austria by 2030?	The team modify this after taking into considerations of stakeholders input
7	14th March 2023	What focus and direction should the business-related meetings industry set and find in the coming years in order to stabilize itself?	Input from Wolfgang Stuiner
8	14th March 2023	How can we mitigate risks and leverage opportunities of the meeting industry in Austria by 2030?	Overall the sakeholders satisfy with the guiding question. Including the idea to cover all Austria despite Vienna and the rest of Austria's city has different experience for attendes, also Vienna capacity more suitable for big event with more than 2000 participants, however the rest of Austria also play a huge role in the meeting industry. The stakeholders also agree to put the idea for sub question regarding the historical background such as covid-19 pandemic, to be counted as risks instead of part of the guiding question. During the first session some risks, adaptation strategy, and system boundaries also has been discussed.

Appendix 2.

Reasons of not joining the transdisciplinary processes

No	Name	Organization	Roles	Date of contact	Date of confirmation	Reason
1	Moritz Colmant	moderator of key note speakers	Practitioners	05/03/2023	06/03/2023	unavailable
2	Harald Rametsteiner	St Polten University	Scientists	06/03/2023	06/03/2023	unavailable
3	Prof. Dr. Florian Aubke	University of Applied Sciences for Management & Communication	Scientists	23/02/2023	23/03/2023	topic out of scope
4	Prof. Dr. Michael-Thaddäus Schreiber	EITW	Scientists	09/02/2023	23/03/2023	topic out of scope
5	Nicholas Wise		Scientists	08/02/2023	10/02/2023	topic out of scope
6	Regina Preslmair	Ministry of tourism	practitioners	24/02/2023	24/02/2023	Unavailable
7	Stefan Walter	Mondial	Practitioners	14/02/2023	14/02/2023	no resources
8	Dieter Scharitzer		Scientists	24/02/2023	28/02/2023	topic out of scope
9	Ulrich Holzbaur		Scientists	08/02/2023	08/02/2023	unavailable

Appendix 3.

Profile of Participating Stakeholders

Practitioners

- Karin Stattmann is a professional in the meetings industry with over 13 years of experience. As the head of sales at Austria Center Vienna, she is responsible for leading the sales team at Vienna's largest convention center. Her enthusiasm for the industry is evident in her passion for creating opportunities and developing new business ventures. She is dedicated to building strategic partnerships and fostering mutually beneficial collaborations with clients and partners. Her extensive experience and expertise in the field make her an asset to the Austria Center Vienna team.
- Gerhard Stuebe has made a name for himself as an innovator and visionary in the congress and convention industry. He is a member of the organizing team of the micelab:bodensee project, a board member of the EVVC, and has been the President of the Austrian Convention Bureau since 2019. The sustainable impact of events is at the center of his work, and he is an ambassador of the World Future Council.
- Marie Lechner is a versatile and professional individual who has been an integral part of the event industry for over 15 years. Her experience includes working as a Senior Project & Communication Manager at Mondial Congress & Event, where she honed her skills in managing events of varying scales and complexities. Currently, as an Association and Congress Manager at Austrian Convention Bureau, she brings her expertise to the forefront by efficiently managing congresses and associations with her skills in project management, communication, and team coordination.
- Christian Woronka is the director of the B2B management of the Vienna Tourist Board and the head of the Vienna Convention Bureau demonstrating a thorough knowledge of the meeting industry in the capital. Moving from his educational background in geography, he has been working all his life in this industry from the positions of marketing to the ones in management. He brings his knowledge adding value to the feedback process required from the practitioning side.
- Michaela Schedlbauer-Zippusch is the current CEO of the Vienna Convention Centre. With years of experience as a CPO, project manager and marketing manager she brings her expertise into this process as a key feedback provider.
- Wolfgang Suitner is the vice-president of the chamber of commerce of Austria. With a big focus on tourism and leisure activities he has been a valuable stakeholder for this project as providing the perspective of the business interests in this process.

Scientists

- Anna Burton is economist and has been working in the Research Group "Structural Change and Regional Development" at WIFO since 2020. Her research focuses on issues related to tourism and

leisure economics, in particular the analysis of economic policy measures in a regional context and regional development, as well as national and international impact analyses. Anna Burton also teaches various subjects in statistics and macroeconomics at Modul University Vienna, University of Applied Sciences WKW Vienna, University of Applied Sciences BFI Vienna and University of Applied Sciences Campus Vienna. She completed her master's degree at Columbia University in New York and has been conducting research on sustainable innovation and regional resilience in tourism as part of her PhD studies at Modul University Vienna since 2019. Prior, she gained experience as a research associate at the Institute for Business Ethics and Sustainable Strategy (IBES) at the University of Applied Sciences WKW Vienna and analyst in the private sector.

- Mag. Mag. Dr. Günther Kainz, Chief of the master program of e governance at Universität für Weiterbildung Krems. He graduated with a master's degree in international management and holds a PHD in philosophy. With experience as a consultor in corporate and as an investigator for different university departments we are in front of a polyvalent profile with a vast curriculum in different disciplines that relate to the Austrian meeting industry. Expert in behavioral sciences, management and applied organization systems, Dr Kainz offers a social scientific oriented perspective into the topic.
- Mrs. Paula Rys, Head of Event Management at Universität für Weiterbildung Krems. She graduated with a Bachelor of Arts in Business (BA) and a master's degree in Organization and Public Utility Management (MA). Paula is an experienced communications professional and a special event planner with more than 14 years of experience in corporate and as a self-employed. Despite working now for a third education institution, her profile responds to the one of a practitioners adapting her experience and know-how.

Appendix 4

System Variables / Impact factors

No	System variables d_t	Short definition and key figures	Status Quo	Possible Characteristics 2030	
Social				Low	High
d1	Participant's satisfaction	Annual participants rating survey	2021. Vienna ranks 1st conference destination (ICCA ranking)	Losing 1st ranking position	Maintaining 1st ranking position
Safety		Short definition and key figures	Status Quo	Low	High
d2	Security Situation		Austria ranks 4th out of 163 countries in Gloval Peace Index 2021	Austria ranks top 4th or higher on Global Peace Index	Austria ranks less than 4th on Global Peace Index
d3	Health system ranking		Free access for basic health to all citizens and residents /// 26/195 Rank -0,5 change from 2019 (2021 Global Health Security Index Index Country Profile)	Austria ranks 26 or higher Global Health Security Index	Austria ranks less than 26 on Global Health Security Index
Technology/Digitalization		Short definition and key figures	Status Quo	Low	High

d4	Number of hybrid meeting		% of hybrid meeting on overall annual meeting in Austria. 2021 16% hybrid, 34% physical.	More than 20% hybrid.	Less than 20% hybrid.
Environmental		Short definition and key figures	Status Quo	Low	High
d5	CO2 footprint	CO2 emissions by meeting industry in Austria	170 kilograms of CO2 emissions per day	CO2 emission more than 170 kg per conference day	CO2 emission less than 170 kg per conference day
d6	Number of eco labeled conferences	The Number of conferences or PCO that satisfy the requirement of ecolabel. The Austrian Ecolabel for "Green Meetings and Green Events" is the first national environmental label which allows the certification of a whole event. Organizers as well as participants and locations are involved and committed in the greening process to create a really sustainable event.	In 2013, 218 events with 241,000 participants and 471 suppliers fulfill the requirement of the ecolabel. 108 license holders in 2023.	More than 150 license holders	Less than 150 license holders.
Attractiveness of Austria		Short definition and key figures	Status Quo	Low	High

d7	Accessibility of Austria	Its well-networked position in Europe and its proximity to eastern Europe play decisive roles when it comes to infrastructure and the transportation of goods and people.	Final consumption of households for transport in Austria 5004 million euro (2019)	+10% increasing (excluding inflation)	any reduction in current number
	Number of airports in Austria		Six international airports(VIE, SZG, INN, GRZ, LNZ, KLU)	Stay with six international airports	More than six international airports
d8	Expensiveness of Country	Ranked in the World #25 Cost of Living	Monthly cost of living in US dollars. The cost of living is calculated based on prices for rent, food, transport, and other living expenses for each city, which form a consumer basket assuming a moderate lifestyle and average consumption	hier 25th place 3 points in rating	lower 25th place 3 points in rating

Economic		Short definition and key figures	Status Quo	Low	High
d10	N. of overnight stay of meeting industry participants		3.4 million overnights in 2019	More than 3 million and a half	Less than 3,5 million overnights.
	Economy contribution of meeting industry on vacation (expenditure by tourists)		expenditure by both domestic and foreign tourists dropped by around 90% on November 2020 compared to 2019 figures, this phenomena is counted as high risk during holiday season	Reduction on tourist expenditure could dropped as low as 10% or less	Reduction on tourist expenditure could dropped lower than 50%
d11	Number of event participants annually		2019. 1 million 760.000	More than 2 million	Less than 2 million

Appendix 5

Threat Scenarios

No. (b_i)	Designation	Threat level (r=1,2)	*Other meeting destination country become more attractive than Austria, when environmental issues is not addressed properly and Austria couldn't implement the novel meeting technology and the economy condition get worst in Austria (TS1)*	*The Austrian meeting industry resistant to innovate and improve and security issue is increasing (TS2)*	*Another catastrophe or unpredictable event happened which limit people's mobility such as Pandemics, and Austria's meeting industry hasn't ready in terms of solving environmental and technology issue (TS3)*	*Covid-19 2020*	References
b1	Number of overnight stay of meeting industry participants	1: low <20% to total overnight stays in 2019	<20%	<20%			
		2: high <50% to total overnight stays in 2019	Austria only able to cater 50% of total overnight stays in 2030 compared to data from 2019		It is possible that the next catastrophe will not allow people move beyond borders or even cities leaving overnight stays drop to 20%	The number of overnight stays in Austria fall by 78% in 2020 (Statista, 2023). Central European countries such as Germany, Slovenia and Austria recorded smaller decline in overnight stays than Southern European countries in summer 2020	https://www.statista.com/statistics/458062/overnight-stays-business-events-austria https://www.oenb.at/dam/jcr:7edfa13d-a743-40ed-914d-f8387f134296/04_mop_Q4_20-Q1_21_Austrian-tourism-sector-badly-hit-by-COVID-19-pandemic.pdf
b2	Number of employed people in the meeting industry	1: low <5% to number of unemployed people in the meeting industry		5% to number of unemployed people in the meeting industry			
		2: high > 9.5% reduction in employment			Possibly higher than 9.5%	Reduction on overall employment in Austria by 9.5% in Nov 2020. The percentage shall reflect from Austria's meeting industry however no data available, hence in this report data of overal Austria is being used.	https://www.reuters.com/article/us-health-coronavirus-austria-unemployme-idUSKBN28B4ZJ

b3	Quality of event industry talent/employee	1 : low	Some good Austria's talent in the meeting industry move their occupancy to neighbouring country	Some good Austria's talent in the meeting industry move their occupancy to neighbouring country	Only limited number of Austria's internal resources could handle the technology operation to run hybrid meeting	Not many people can operate the technology operation, it correlates to high cost of hybrid meeting.	
		2 : high	A lot of Austria's talent move their occupancy to neighbouring country, leaving Austria with many newcomer but less expert so there is no chance for the new comer to learn (no knowledge transfer)		There is a demand to outsource (from other countries) talent who able to operate/maintain/repair hybrid meeting technology		
b3	Number of event participants annually	1: low	Less 10% than 2 million attendees on-site				
		2: high	Less 50% than 2 million attendees on-site		Possibly reduction by 70%	The number of event participant in Austria is dropped with estimation more than 70% this is due to the fact that this measurement unit are derive from number of overnight stays.	
b4	Number of hybrid meeting	1: low					
		2:high			More than 20% of meeting in Austria will be hybrid in 2030	16% of meeting held in Austria is in hybrid mode	
b5	Economy contribution of meeting industry on vacation (expenditure by tourists)	1 : low	Reduction on tourist expenditure could dropped as low as 10%	Reduction on tourist expenditure could dropped as low as 10% or less			
		2: high	Reduction on tourist expenditure could dropped lower than 50%		When a restriction will be imposed the expenditure from tourist fall by 100 percent	expenditure by both domestic and foreign tourists dropped by around 90% on November 2020 compared to 2019 figures, this phenomena is counted as high risk during holiday season	https://www.oenb.at/dam/jcr:7edfa13d-a743-40ed-914d-f8387f134296/04_mop_Q4_20-Q1_21_Austrian-tourism-sector-badly-hit-by-COVID-19-pandemic.pdf

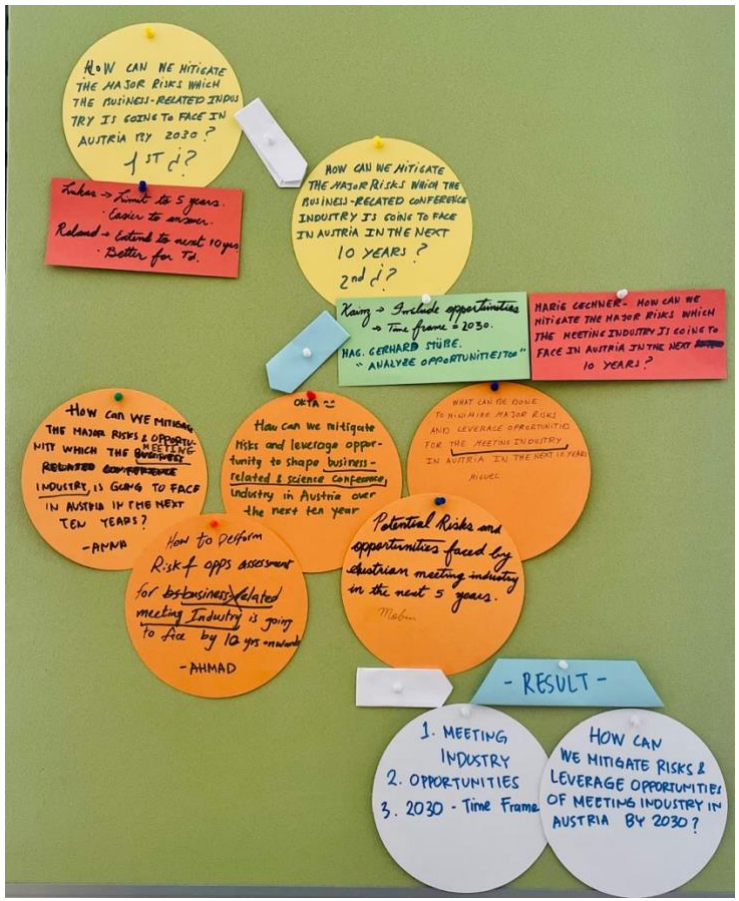
Appendix 6

Impact factors on FSA tool

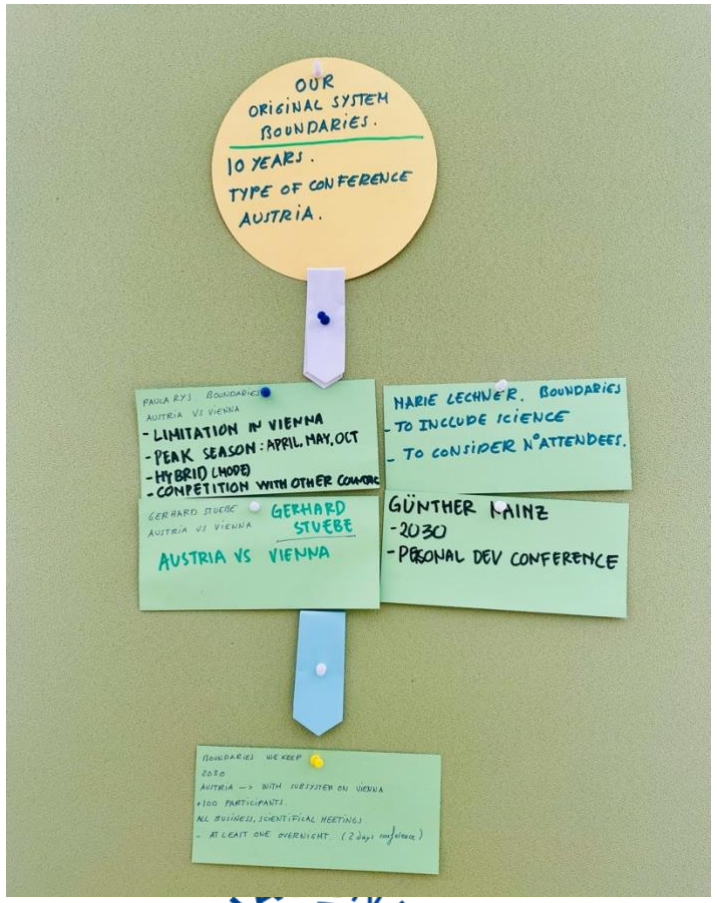
-	Annual Participants Rating low	Annual Participants Rating high	Security Situation low	Security Situation high	Health System Ranking low	Health System Ranking high	No. of Hybrid Meetings low	No. of Hybrid Meetings high	C-Footprint low	C-Footprint high	No. of Eco-labelled Conferences low	No. of Eco-labelled Conferences high	No. of Employed ppl in Industry low	No. of Employed ppl in Industry high	No. of Event Participants low	No. of Event Participants high	No. of Overnight Stays low	No. of Overnight Stays high	Accessibility of Austria low	Accessibility of Austria high	Expensiveness of Country low	Expensiveness of Country high
Annual Participants Rating low	-	-	2	1	2	1	1	1	1	2	2	1	1	0	2	1	2	1	2	0	0	2
Annual Participants Rating high	-	-	0	2	0	2	1	1	2	1	1	2	0	0	0	1	1	2	0	2	2	1
Security Situation low	-	-	-	-	1	1	0	1	0	1	0	1	0	1	0	2	2	0	1	1	1	1
Security Situation high	-	-	-	-	1	1	2	1	1	2	1	2	1	2	1	2	1	2	1	2	1	1
Health System Ranking low	-	-	-	-	-	-	1	1	1	1	2	1	2	1	2	1	2	1	1	1	2	1
Health System Ranking high	-	-	-	-	-	-	1	1	2	1	1	1	1	1	0	2	0	2	1	1	1	1
No. of Hybrid Meetings low	-	-	-	-	-	-	-	-	1	2	1	1	1	1	0	1	1	2	1	1	2	1
No. of Hybrid Meetings high	-	-	-	-	-	-	-	-	2	1	0	2	1	2	2	1	2	0	2	1	1	1
C-Footprint low	-	-	-	-	-	-	-	-	-	-	1	2	1	1	2	1	2	1	2	1	1	1
C-Footprint high	-	-	-	-	-	-	-	-	-	-	2	0	0	2	0	2	1	2	2	1	2	1
No. of Eco-labelled Conferences low	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	0	0	0	0
No. of Eco-labelled Conferences high	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	2	0	2	1	1	1	1
No. of Employed ppl in Industry low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	0	1	0	0	1
No. of Employed ppl in Industry high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	0	0	1	1	0	0
No. of Event Participants low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	1	1	2
No. of Event Participants high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	1	2	2	1
No. of Overnight Stays low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	2
No. of Overnight Stays high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1
Accessibility of Austria low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2
Accessibility of Austria high	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
Expensiveness of Country low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expensiveness																						

Appendix 7.
Integration processes

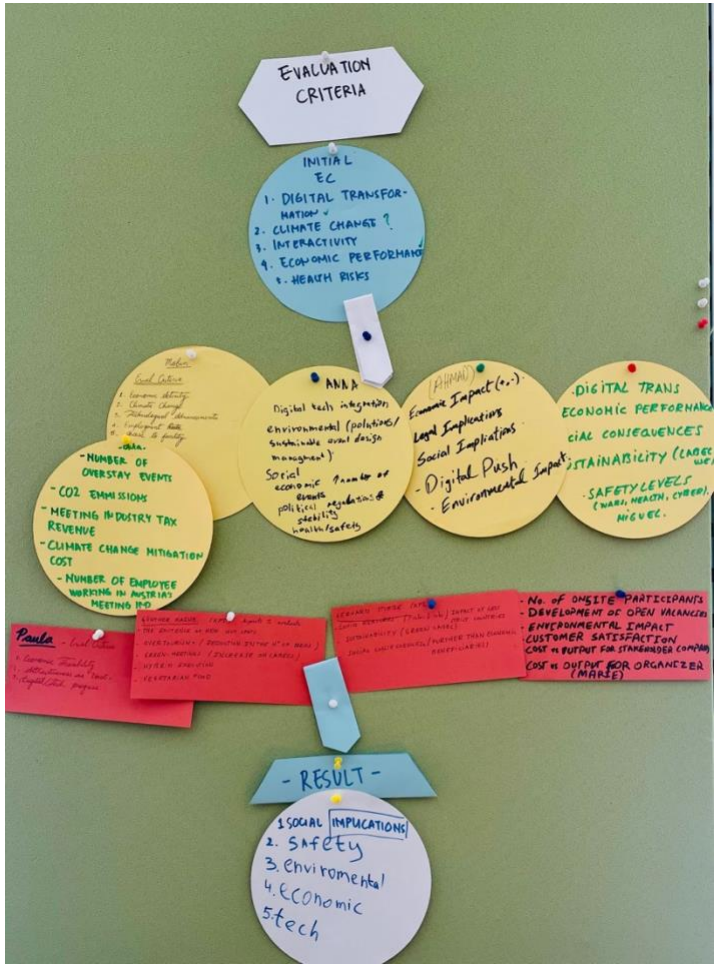
a. Guiding question



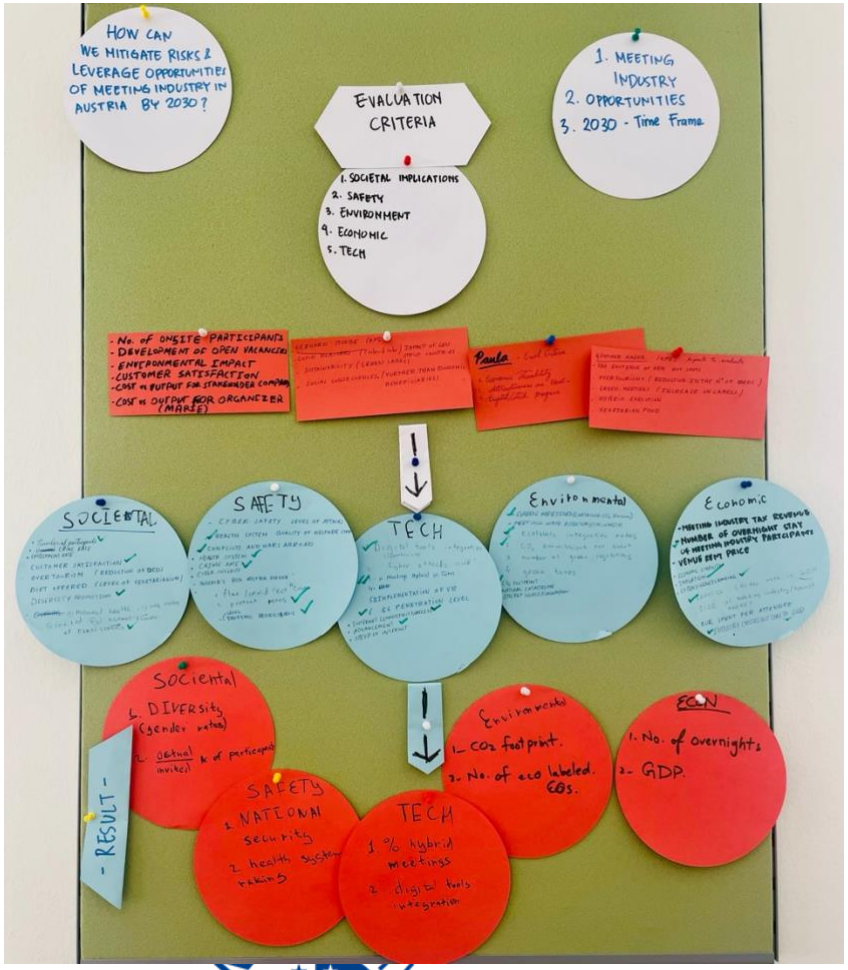
b. System boundaries



c. Evaluation Criteria



d. Impact factors



Appendix 8

The evolution of impact factors

	I. First Draft - literature reviews		II. Second Draft - Feedback from emails		
No	**Label**	**Short definition**	**Label**	**Short Definition**	**Unit**
1	Economic development of Austria (GDP growth)	The economic development and conditions will affect the meeting industry's frequency of events .	Gender Equality	The aim of gender equality in the workplace is to achieve broadly equal opportunities and outcomes for women and men, not necessarily outcomes that are exactly the same for all. Workplace gender equality will be achieved when people are able to access and enjoy equal rewards, resources and opportunities regardless of gender.	Gender Balance Standard set in SDG 5
2	(Environmental) CO2 footprint	The carbon/ecological footprint may push this industry to reduce its emissions to avoid law violations	N. of participants	Number of events parciticipant who come to Vienna and spend	Int'l Association of Exhbition & Enent suggests > 60% ratio for invited to attendee is good.
3	(Social) Mental health issues rates / depression rates	Heat waves, extreme colds and other catastrophic events are increasing in frequency so it may affect the mobility of the meeting industry	National security level		Austria ranks 4th out of 163 countries in Gloval Peace Index 2021
4	(Social) Perception of tourism	The higher local perception towards tourism, the more people want to work and it means generates greater economic impact.	Health system ranking		Free access for basic health to all citizens and residents /// 26/195 Rank -0,5 change from 2019 (2021 Global Health Security Index Index Country Profile)
5	(Environmental) Extreme weather events	According to WHO mental health is a “state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community	% of hybrid meetings		
6	(Technology) cybercrime rate	criminal activity that either targets or uses a computer, a computer network or a networked device in Austria	Digital tools integration in events		
7			CO2 footprint	CO2 emissions by meeting industry in Austria	Meeting industry emitted 1.5 million metric tons of CO2 in 2018 Austrian Federal Economic Chamber

8			Number of eco labeled conferences	The Number of conferences or PCO that satisfy the requirement of ecolabel. The Austrian Ecolabel for "Green Meetings and Green Events" is the first national environmental label which allows the certification of a whole event. Organizers as well as participants and locations are involved and committed in the greening process to create a really sustainable event.	In 2013, 218 events with 241,000 participants and 471 suppliers fulfill the requirement of the ecolabel
9			N. of overnight stay of meeting industry participants		3980 overnight stays in Austria 2020
10			Service sector rate in GDP		Meeting industry contribute 3% to Austria's GDP in 2018
11			Competitive advantage/disadvantage compared to other countries		

No	III. Final Draft - After 1st Stakeholders Conference		
	Label	**Short Definition**	**Unit**
1	N. of employed ppl in the meeting industry	The aim of looking at the number of people employed by the meeting industry in Austria is to see the economic impact that the industry is making.	
2	N. of participants	Number of events participant who come to Vienna and spend	Int'l Association of Exhibition & Event suggests > 60% ratio for invited to attendee is good.
3	Security Situation	Security situation include both the national security and the security of the event itself.	High Low 5% Increase in crime rate & statistics in Austria
4	Health system ranking		Free access for basic health to all citizens and residents /// 26/195 Rank -0,5 change from 2019 (2021 Global Health Security Index Country Profile)
5	No. of hybrid meetings		
6	Accessibility of country	It means how suitable the location is of a country to hold an in-person conference	
7	CO2 footprint	CO2 emissions by meeting industry in Austria	Meeting industry emitted 1.5 million metric tons of CO2 in 2018 Austrian Federal Economic Chamber
8	Number of eco labelled conferences	The Number of conferences or PCO that satisfy the requirement of ecolabel. The Austrian Ecolabel for "Green Meetings and Green Events" is the first national environmental label which allows the certification of a whole event. Organizers as well as participants and locations are involved and committed in the greening process to create a really sustainable event.	In 2013, 218 events with 241,000 participants and 471 suppliers fulfil the requirement of the ecolabel
9	N. of overnight stay of meeting industry participants		3980 overnight stays in Austria 2020
10	Expensiveness of Country	It basically shows the affordability and the costs that the participants would have to bear for attending an in-person conference	Cost of living index
11	Annual participants rating survey		

Appendix 9
The evolution of evaluation Criteria

Criteria No.	I. First Draft - Literature Review	Short definition	II. Second Draft - Literature Review	Short Definition
1	Digital transformation	This defines the amount of technological advancements in the Austrian meeting industry.	Digital transformation	This defines the amount of technological advancements in the Austrian meeting industry.
2	Climate change (severe extreme weather)	Climate change can lead to natural catastrophes which is a risk to this industry.	Climate change (severe extreme weather)	Climate change can lead to natural catastrophes which is a risk to this industry.
3	Behavioural changes	How businesses' behaviour changes with time can have a significant impact on the meeting industry.	Behavioural changes	How businesses' behaviour changes with time can have a significant impact on the meeting industry.
4	Economic performance	The country's economic performance has a certain impact on the operations of the Austrian meeting industry.	Economic performance	The country's economic performance has a certain impact on the operations of the Austrian meeting industry.
5	Health risks	After the onset of COVID 19, in person meetings can be a health hazard which is why health risks are impacting this industry.	Health risks	After the onset of COVID 19, in person meetings can be a health hazard which is why health risks are impacting this industry.
6	Political risks	Any kind of political instability, events, or changes which impact the meeting industry,.	Political risks	Any kind of political instability, events, or changes which impact the meeting industry,.
7	Cyber security risks	Due to the digital aspect of the meeting industry, cyber security risks are high for the changing meeting industry.	Cyber security risks	Due to the digital aspect of the meeting industry, cyber security risks are high for the changing meeting industry.

Criteria No.	III. Third Draft - Feedback from email	Definition/Scope	IV. Fourth Draft - Integrated Ev criteria after 1st stakeholders	Definition/Scope
1	Societal Implications	The impact of Austria's meeting industry to the society	**Not Applicable**	
2	Safety implications	This including healthy, safety or mitigation in case of catastrophic happened	**Participant's safety**	This including healthy, safety or mitigation in case of catastrophic happened
3	Environmental implications	Includes CO2 emission, eco-label on green meetings	**Environmental implications**	Includes CO2 emission, eco-label on green meetings
4	Economical implications	Overall Austria's economy, the price of overnight stay	**Economical implications**	Overall Austria's economy, the price of overnight stay
5	Technical implications	Digital transformation	**Digital connectivity**	**The readiness of Austrian's industry to apply advanced meeting industry tech**
6	Social implications		**Social implications**	**Participant's satisfaction**

Appendix 10.
System Boundaries

No	Date	Label of system	System definition	Total system/subsystem?	Who modified why?	Comments
1	14th Jan 2023	Austria's business-related conference	It's a system defining Austria's business-related conference contains of stakeholders and connection between each others	8 sub system : Regulator, scientists, Industry associations, venue partners, attendees, sponsors, PCO, and tourism partners. It's apparently not sub-system but stakeholders	No modification so far	
2	3rd March, 2023	Austria's business-related conference	It's a system defining Austria's business-related conference contains of stakeholders and connection between each others Nationally and Internationally	2 Sub-Systems in the meeting industry from Mag.Gerhard Stübe's Point of view: Vienna as a world-renowned congress and conference location and Vienna as suburban industry with medium and small conference facilities. Each systems have their own pros and cons.	No modification so far. Mr. Mag. Gerhard Stübe's Suggestion.	Recorded as feedback from Mr. Mag. Gerhard Stübe. Pros(strengths): centuries of tradition, former political influence in EU, shaped by "congress of vienna", hospitality. Cons (threats): no major investments, justification of use of financial support.
3	8th March, 2023	Austria's business-related conference & scientific conferences			Mr. Gunther Kainz	I would not exclude scientific conferences as they play a major role in the meeting industry, especially in Austria, assuming that also medical congresses are seen as scientific conferences.
4	9th March, 2023	Austria's meeting industry (inclusing business-related conferences and including science too)	include science add number of attendees		Marie Lechner	
5	9th March, 2023	Limitation of the system	Austria vs Vienna seasoning =hot season April, May, October Physical and Hybrid mode subsystems (competatives)		Paula Rys	
6	9th March, 2023	Redefined system boundaries	Temporal - by 2030 Geographical Austria + subsystem Vienna Number of participants >100 Types of meetings (Business & scientific) Length of the event at least one overnight		Team after integrating the knowledge from stakeholders	

7	14th March 2023	Redefined system boundaries	Temporal - by 2030 (no opposite argument) Type of meeting - a. Number of attendance : at least 2000 attendance as suggested by Marie Lehner for off-line, and for hybrid at least 100 attendance. b. Classification of events : including fair and it's also play an important role in Austria's economy however it might give a little complexity on evaluation criteria as Marie mentioned on Austria's meeting report fair is not counted. c. Duration : one overnight stay at least, as this type of event add more value to Austria's economy and tourism	Sub system : 1. Vienna as special location with its ability to cater larger number of people		

Appendix 11

Threat Scenario & the rating

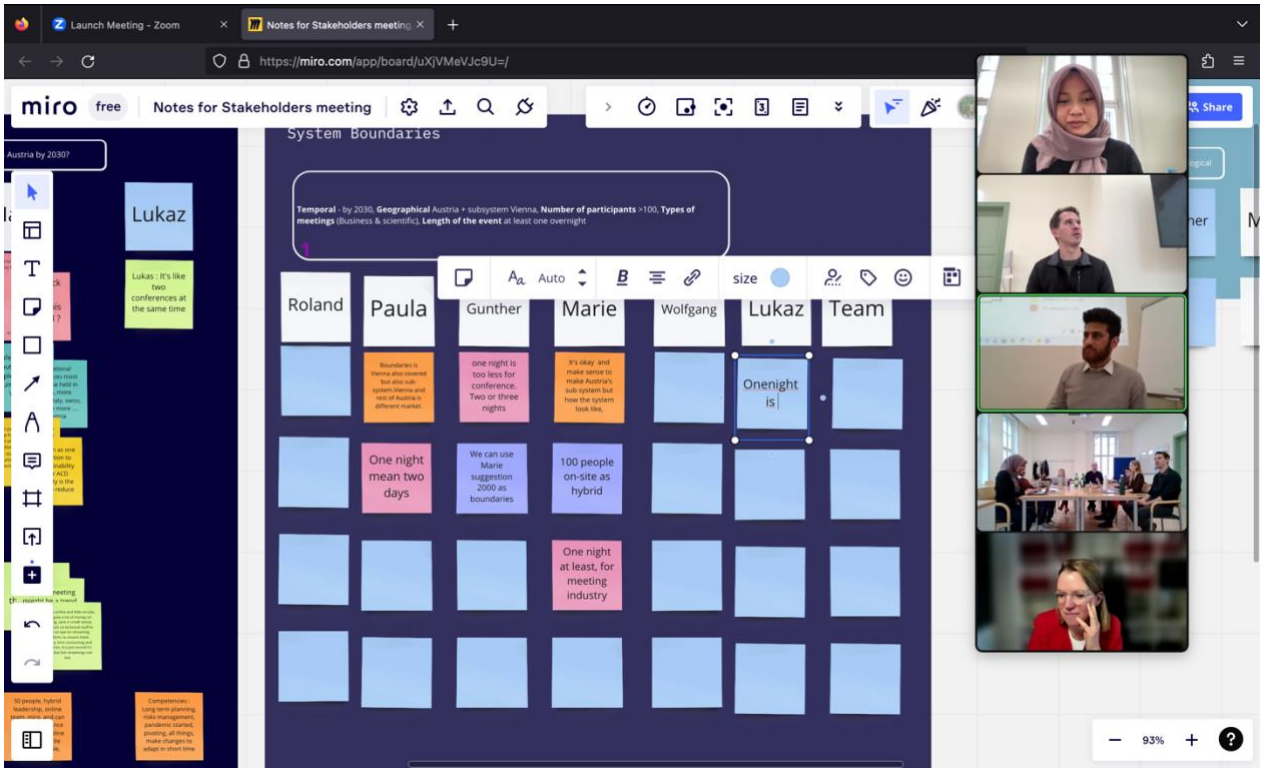
Evaluation criteria ->	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	Remarks	Description	Anna Burton	Gerhard Stübe	Günther Kainz	Marie Lechner	Paula Rys
Status Quo	✓	✓	✓	✓	-	✓		Vienna is on the 1st ranking position as a top conference destination and Austria is in top 4 rank in the Global Peace Index for being safe. Austria's ranking rank is no. 26 on Global Health Security Index. The involvement of Hybrid Meetings in Austria stayes is 20% and the meeting industry emits at 170 kg of CO2/conference in a day and than 150 licenseholders of eco-labelled meetings. In Austria, people employed by the meeting industry sum up to a total of 21,500 which are hosting2 million participants this year for events that causes overnight stays 3.5 million people. Furthermore, the household spending on public transport is 5B Euros, wheareas Austria is 25th rank in the World Cost of Living Index. In other words, in this scenario Austria still more preferable than other destinations and the economy status is stables.	Rather than absolute use percentage (relative)	the impact economy to holiday industry	Participants satisfaction use Austria if possible, because of the system boundaries. Accesibility : country side into consideration because people lives there have hard time to use public transport like those in Vienna		Some figures are for Austria, but some only for Vienna. Also the clarification about CO2 emissions only scope 1 & 2
Evaluation criteria ->	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	Remarks	Description	Anna Burton	Gerhard Stübe	Günther Kainz	Marie Lechner	Paula Rys
S7	X	x	X	X	X	x	1st	Vienna loses its 1st ranking position as a top conference destination even though Austria stays in top 4 rank in the Global Peace Index for being safe. Austria's ranking plunges below rank no. 26 on Global Health Security Index. The involvement of Hybrid Meetings in Austria stayes below 20% and the meeting industry emits more than 170 kg of CO2/conference in a day for its functioning despite having more than 150 licenseholders of eco-labelled meetings. In Austria, people employed by the meeting industry sum up to a total of less than 21,500 which are hosting less than 2 million participants annualy for events that causes overnight stays of less than 3.5 million people annually. Furthermore, the household spending on public transport reduces and is less than 5B Euros, wheareas Austria is getting less expensive as its place for expensive gets lower than 25th rank in the World Cost of Living Index	2	2	2	2	2

S14	X	X	X	✓	X	x	2nd	Vienna lost its rank as the 1st conference destination, Austira ranks on Global Peace Index and Global Health Security Index also decreased from 2021, which are 4th and 26th respectively. The involvement of Hybrid Meetings in Austria stayes below 20% . Moreover, the Co2 emissions increase to beyond 170 kg per day of conference. In addition, the number of eco-labelled meeting number also decreased to be less than 160 licence holders. However, the industry shows a great performance in economic with more than 3 million and a half overnight stays happening because of the meeting in Austria, and more than 21500 employeees working in the meeting industry. Also, the industry manage to host more than 2 million attendees on-site. On the other side, atttractiveness of the country might decrease because of the reduction of houlholds consumption for transport which reach 5004 million euro per year. Further, in this scenario Austria loosing its ranking as the 25 cost of living which implies that the country is more expensive than before.	1	1	1	1	1
S3	X	x	X	✓	✓	X	3rd	Particapants have low satisfaction with events (Vienna looses 1st rating position for conference destination - less competiveness), political situation is stable (security situation remains in top-4 global peace index) but health system is not adapted to new pandemics/hier workload (less than 26th position in Global health security rating), technology is being implemented to industry and hybrid meetings are increasing (more than 20% are hybrid), environmental risks are not adressed (CO2 emmisions >170 kg per conference day and there are <150 ecolabel licence holders), meeting industry job market is increasing (>21,500 empoyees in the meeting industry), number of particapants (>2 million yearly) and their overnights are increasing (> 3,5 million overnights yearly), accessibility (<5004 million euro public transport spending) and expensiveness of Austria is increasing (>25 place in world cost of living) so Austria looses attractiveness for events (in long term?)	3	3	3	3	3

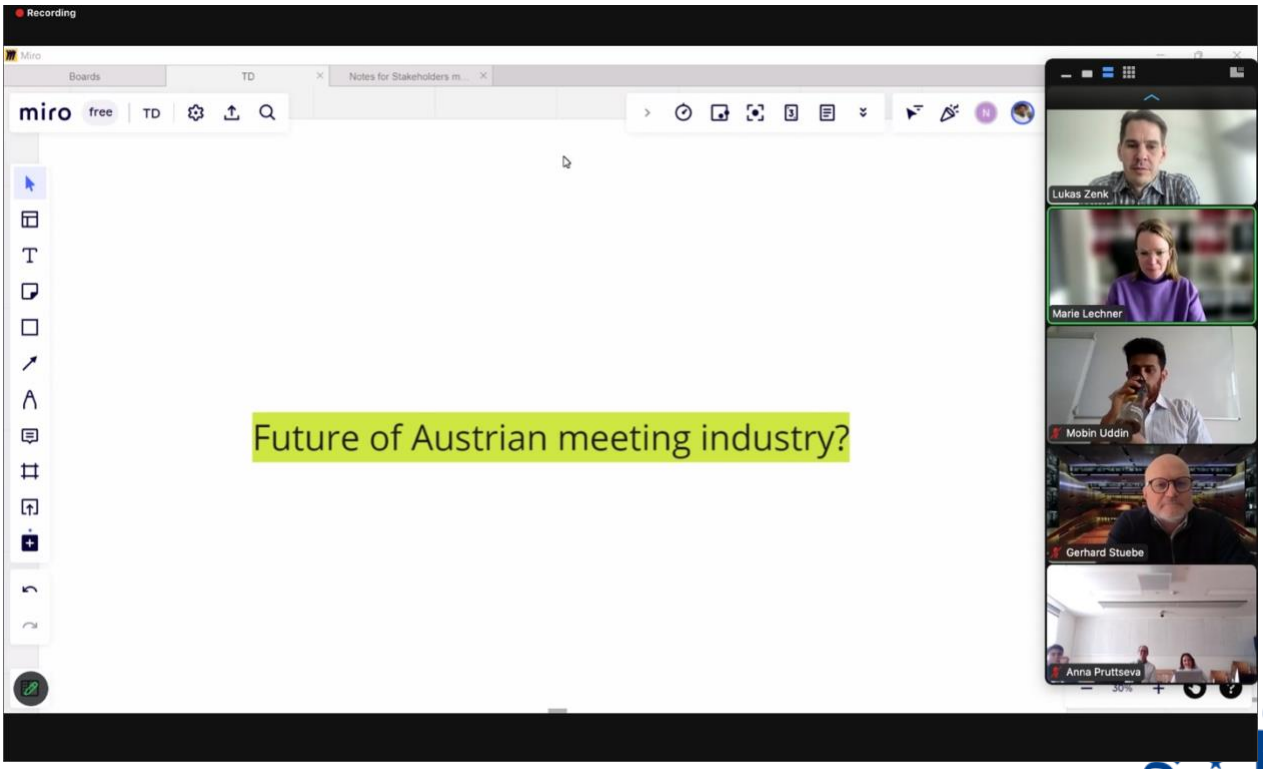
EC 1	Societal Implications
EC 2	Safety implications
EC 3	Environmental implications
EC 4	Economical implications
EC 5	Technical implications
EC 6	Atractiveness of Austria

Appendix 12
Documentation

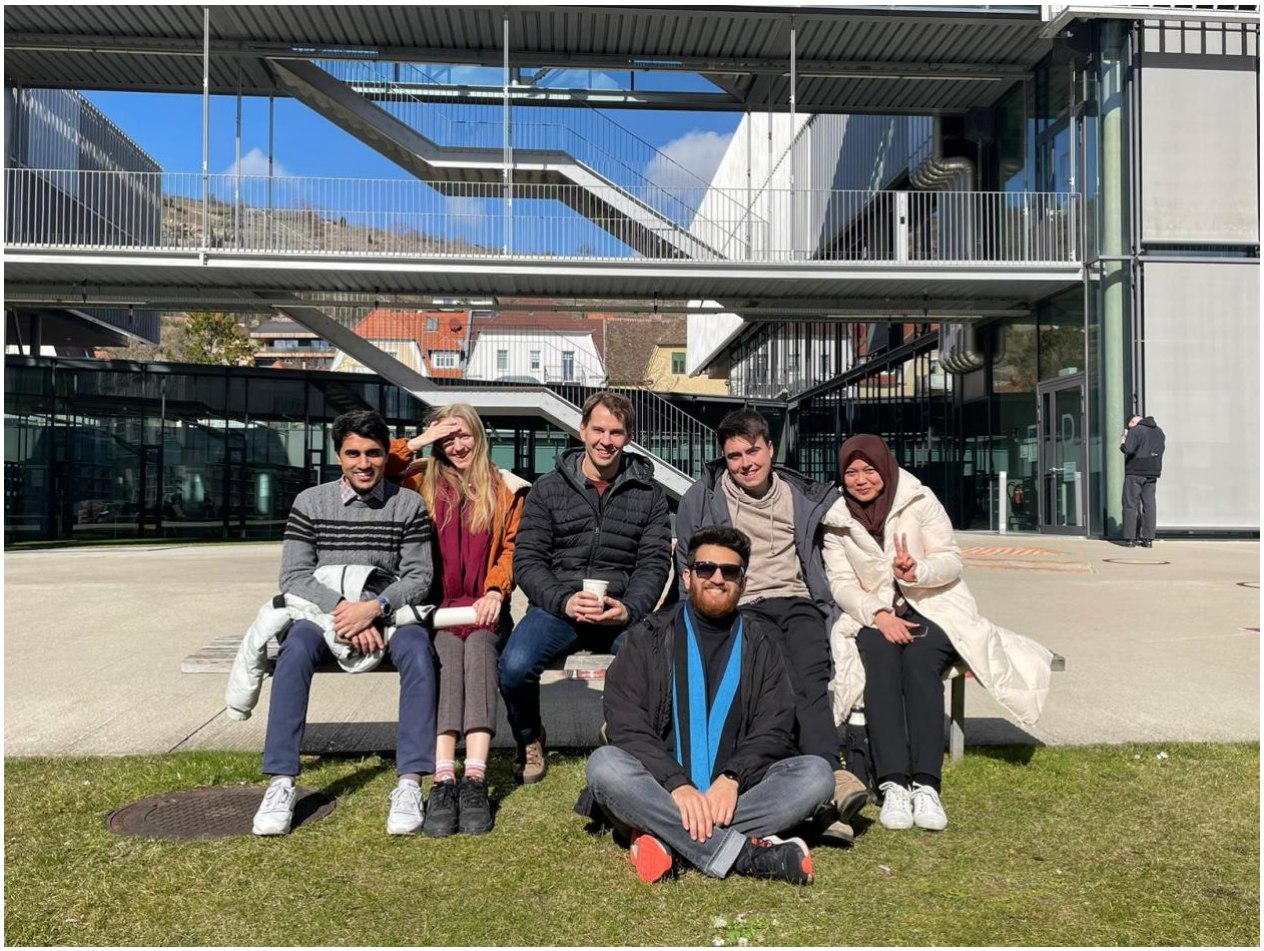
I. First Stakeholders conference



II. Second Stakeholders conference



III. Team and supervisor at DUK



IV. Facilitators during integrating the impact factors