

**Czech Olympic Committee &  
University of Economics, Prague**  
Faculty of International Relations



SPORT DIPLOMACY

# **Evaluation of the first part of #WindtunnelHandifly project**

thesis

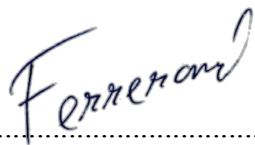
Šárka Ferrerová

Prague 2022

**Affidavit**

I hereby declare that this thesis represents my own written work and I have used only resources and aids indicated in this document.

Prague, 15. 05. 2022

  
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Šárka Ferrerová

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## **Abstract**

This thesis aims to evaluate the first part of the #WindtunnelHandifly, a project with an objective of a mass and worldwide wind tunnel flight development for people with disabilities, organized by the French Parachuting Federation, and supported by the European Union and co-funded by its Erasmus+ Program.

First, descriptive part of the thesis briefly addresses the topic of sport for people with disabilities, afterwards discusses wind tunnel flying or indoor skydiving and then intersects those two topics in a description of the #WindtunnelHandifly project itself. The second, analytical part consists of a quantitative research based on a questionnaire shared with the project participants and a qualitative research based on several interviews with persons involved in the organization of the #WindtunnelHandifly project and also in wind tunnel flying for people with disabilities in general. The evaluation results, recommendations and conclusions located at the end of the thesis are formed on both – the descriptive and the analytical part of the thesis.

## **Keywords**

Sport diplomacy, air sports, indoor skydiving, wind tunnel, flying, WindtunnelHandifly, sport for disabled, sport for handicapped, disability, disabilities, handicap

## **List of used abbreviations**

#WH	#WindtunnelHandifly
EU	European Union
FAI	Fédération Aéronautique Internationale / World Air Sports Federation
FFP	French Parachuting Federation

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## INTRODUCTION

Flying has possibly always held an attraction for humanity and it certainly attracts people nowadays. Perhaps this attraction and desire is even greater than ever with new possibilities and technology. Without a doubt, new possibilities and technology in regards of flying can be represented by wind tunnels and so called indoor skydiving or wind tunnel flying. This activity quite probably might be now the most accessible air sport which one can try oneself. Even children as young as five years or people with disabilities such as blindness, limb deficiency, quadriplegia and many others can take part in it. Based on that a project called #WindtunnelHandifly, hereafter referred to as #WH project, was created and is organized by the French Parachuting Federation (FFP) in order to help a development of this activity for people with disabilities. This project might support social inclusion and connecting of people from different parts of society. European Union (EU) recognized its potential, took it under its wings and it is co-funded by its Erasmus+ Program.

The goal of this thesis, as its title already suggests, is to evaluate the completed parts of the #WH project and at the same time answer whether the aims of the #WH project were or are on the way to being achieved. Other intentions are to hopefully create valuable feedback and come up with possible suggestions for improvements. In an effort to base the evaluation on the highest quality sources and information possible, the main parts of this thesis is an original quantitative research based on questionnaires sent to the #WH project participants and also original qualitative research where persons highly involved in the #WH project or in wind tunnel flying as an activity for people with disabilities in general were interviewed. Naturally, the research was based on and supplemented by theoretical analysis as well.

To the best knowledge of the #WH organizer, prior to this thesis no academic work or research regarding this project has been done<sup>1</sup> and the main manager of the #WH project expressed himself that this thesis might be used as a part of the official evaluation of the #WH project given to the EU at its conclusion.

In the Czech Republic, there is only one wind tunnel. However, it is one of the pioneer wind tunnels in Europe. It hosted the 1<sup>st</sup> World Championships in Indoor Skydiving under

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<sup>1</sup> However, couple of days before this thesis was finalized, the information was received that another academic work is being prepared. However, it's centre of attention is different from this thesis. It is regarding the classification process used within the #WH project, which is mentioned in this thesis for example in the third part of the descriptive basis regarding the #WH project.

the auspices of World Air Sports Federation (FAI). Also, it is one of the first wind tunnels where people with disabilities began to fly regularly and where the community around the tunnel created one of the prototype orthoses allowing so called sport flyers with, for example, paralyzed lower limbs to participate on this activity more comfortably and in a more effective way. Therefore, it does not come as a surprise that the Czech wind tunnel did not hesitate in joining the #WH project and is one of the most active partners<sup>2</sup>. The author of this project worked as the main manager of the above-mentioned championships and is the person responsible for the coordination of the Czech #WH project participation, which allows her to have good access to the necessary resources and provides her with understanding of the subject.

## **1. DESCRIPTIVE BASIS**

### **1.1. Sport for people with disabilities**

Sport has many benefits for society. It enhances health, reduces stress, it unites people across the world, it inspires and challenges them and much more. In the case of people with disabilities, “sport is of even greater significance for the well being of severely disabled than it is for the able-bodied” (Guttmann. 1973:208). It might help to restore or improve one’s strength, coordination, endurance or other aspects of physical performance. It brings joy, pleasure and relaxation which might be very desired or necessary if a person is frustrated by his own limits. And last but not least, it helps a person to socialize and not necessarily just with other people with disabilities. (Guttmann 1973 & McCann. 1996)

Sport for people with disabilities started to develop after the First World War. „However, it was the Second World War, with its large number of disabled which was a great incentive for reviving the idea of sport as an aid for the remedial treatment and rehabilitation of the injured“. (Guttman. 1973:209) Nowadays, as it is scientifically approved and generally accepted that benefits from sport activities practiced by people with disabilities are real, governments, institutions, local authorities and governing bodies around the world support it in various different ways. Therefore, these activities and participation in them are growing rapidly. And unsurprisingly, there is now even an elite level of sports practiced by people with

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<sup>2</sup> as confirmed by the #WH organizer



disabilities. (Thomas, Smith 2009: 116-134) „The first Paralympics were held in 1960 in Rome immediately after the Olympic Games“. (Thomas, Smith 2009:120) With it comes the commercialization and professionalism of these kinds of events and a correlative increase in the media coverage and attention devoted to those competitions and athletes who participate in them“. (Thomas, Smith 2009:135) All that shows that sport activities for people with disabilities are already well established within the society.

## **1.2. Wind tunnel flying or indoor skydiving**

During its history, humankind has come up with many ways to safely enjoy the experience of flight. Whether it be hot air balloons, planes, helicopters, gliders, parachutes or more recently wind tunnels. They are vertical (or nowadays also inclined) tubes of varying diameter, made currently most commonly with transparent walls in which strong airflow is produced by motors. They “have been in use since the end of the 19<sup>th</sup> century for use in aerodynamic testing, but since the late 1960s they have been used for skydiving simulation” (Bryce Kelsay. 2016:23). Flying in them began to be available to the general public in the eighties in the United States of America and it grew rapidly in the last decade. Since 2012 the number of wind tunnels has risen from less than fifty to more than two hundred. (FAI SKYDIVING COMMISSION (ISC). Indoor Skydiving.)

One of great aspects of wind tunnel flying is that almost anyone can experience and practice this activity. Wind tunnels all over the world recommend a minimum age from three to five years. There is no upper age limit. And people with different kinds of disabilities can fly as well. Just in Prague wind tunnel alone, probably hundreds of people with disabilities have tried this activity and their disabilities were from physical ones such as tetraplegia, limb deficiencies, short stature, ataxia, vision impairments etc. to intellectual impairments.

The activity is usually called either wind tunnel flying or indoor skydiving and sometimes also body flying. Indoor skydiving is the official name agreed on within the FAI, an organization which officially includes it as a sport under the skydiving (formerly parachuting) disciplines. However, for the purpose of this thesis, I will refer to it as wind tunnel flying as this thesis discusses rather the activity than an official sport and also to follow the word choice of the #WH project itself.

### **1.3. #WindtunnelHandifly Project**

It all started with skydiving and parachuting. It was skydivers who first recognised the potential of wind tunnels as a training tool for a human flight and a sport facility. Moreover, the #WH project was preceded by Handifly Euro Challenge. That is another project also organized by the FFP, supported by EU and co-funded by its Erasmus+ Program. Handifly Euro Challenge then resulted in the first years of international skydiving competitions dedicated to people with disabilities. People with motor disabilities accompanied by tandem instructors competed in free-fall as they were skydiving from airplanes. While running this project its organizers learned that wind tunnel flying is an ideal way to allow anyone, whatever their disability, to access flying in autonomy and so the #WH project originated. (EUROPEAN COMMISSION. Développement de masse du vol en soufflerie en faveur des personnes en situation de handicap.)

#WH is a non-profit initiative led by the FFP, validated by its Executive Board in February 2020. In November 2020, the project received a financial grant under the Erasmus+ Sports program from the Commission of the EU. The aims of #WH are „to contribute to equal opportunities while constituting for the EU a modern and exemplary media symbol of its social inclusion policy“. Its mission is dual: „1/ The conduct of a program of mass development of flight by all disabled people through a European network of wind tunnels (sending organizations of participants) whose aim will be to innovate, experiment and disseminate best practices in accompanied discovery flight, in solo progression and then in autonomous competition. 2/ The organization in France of the 1st global meeting of Handifly in wind tunnel in the form of a public multi activity event of 4 days including the first world competition in history, discover flights, demonstrations, a seminar and a conference.“ The project should „serve as a springboard for a worldwide dissemination.“ (EUROPEAN COMMISSION. Développement de masse du vol en soufflerie en faveur des personnes en situation de handicap.)

In order to accomplish the goals, FFP has reached out to various tunnels and tunnel flying and skydiving organizations around Europe offering them a possibility to be partners of the project. There are now sixteen partners from ten European countries (FÉDÉRATION FRANÇAISE DE PARACHUTISME. #WindtunnelHandifly) which have committed to recruit eligible persons with disabilities mainly from within their country or area to come and practice wind tunnel flying in their facilities. Regarding the eligibility, there is a list of different kinds of disabilities (including intellectual impairment) given by the #WH organizer. It is a responsibility of each #WH partner carrying out the wind tunnel flights to make certain of

the eligibility of each participant. #WH partners are also required and expected to manage and organize realization of flights of people with disabilities while always ensuring safety and meanwhile try to come up with technical tips, possibly upgrade existing or develop new equipment for these activities and find best methods to enable project participants to become quickly autonomous flyers. Additionally, #WH partners agree to support project visibility in media by organizing inaugural days and ensuring appearance of the project in regional or national television and any other media that are possible. FFP, on the other hand, provides finances to cover in total over 9000 minutes of wind tunnel flying divided between discovery flights (in the #WH project also called first flights) and additional flights (in the #WH project also called progression flights) meant for training of participants selected by the partner (CLARKE, O. The disabled fly free-of-charge with the "windtunnel handifly project"). Moreover, #WH partners also receive funding for promotion and communication with media and public, as well as orthoses which allow flyers with for example paralyzed lower limbs to participate on this activity regularly in more comfortable and in a more effective way, and other kinds of support. There are several communication tools and ways how to keep track of and monitor the project progress, for example an online reporting platform at the FFP website or email discussion thread called #WindtunnelHandifly Discussion group that aims to allow a technical exchange between the different partners of the #WH project.

Furthermore, there is a second stage of the #WH project that consists of an organization of a so called #WH event. An event that is planned to include the first international competition in wind tunnel flying dedicated to people with disabilities called Handifly Race but also demonstration flights, a seminar, a conference, hosting of VIPs etc. Partners can send delegations to the event and travel, accommodation and other expenses up to given limit will be covered by the funds of the #WH project. It is planned to be held from 18th to 21st of May 2022 in Aix-Marseille, France. (Originally, it was planned for June 2021 but it was delayed for reasons related to the covid-19 pandemic.)

The competition rules for the Handifly Race are developed within the #WH project as well. They contain a list of eligible impairments and a classification system which includes a compensation coefficient that makes it possible to weight the performance achieved by each flyer according to an analysis of his overall aerodynamic motor skills. (#Handifly Race Competition Rules. 2022:5) However, because of this system, the intellectual impairment is not included in the eligible impairments for the Handifly Race.

## 2. EVALUATION PLAN

An evaluation of a project can be done by different ways, from different perspectives, looking at different aspects of it. It cannot be generalized what is the best way to carry out an evaluation, but an evaluation plan may help the attempt to be as systematic and objective as possible while taking into account the resources and data available. “An evaluation plan is a proposal that describes the process that will be used to guide an evaluation.” (Thomas 2015:106) Later, that plan serves as a base and a guideline of the research execution and also, it is taken into consideration while coming up with conclusions of the thesis.

Here, it is important to explain, that due to the time frame of the academic sport diplomacy program under which this paper is written and therefore the time limits for this thesis, only the first part of the #WH project could be evaluated in this paper. The advantage of not being able to evaluate the project after its termination is that by the time of conducting this thesis research, the #WH project was still fresh in respondents’ memories or in their present. Some of the respondents were even preparing for the #WH event at time when the research for this thesis was conducted. The timeliness of the research might assure this evaluation a certain added value. In any case, hopefully, despite its time limitation this thesis will have its benefits in its field.

According to Thomas (2015:23) this evaluation could be described as an outcome evaluation, because it is mainly focused on the outcome of the first part of the #WH project and tries to see whether its goals were met, its mission fulfilled and see the impact of the project. Specially, the first part of the officially stated project mission is taking into consideration as it follows the general set up of the project and it was already stated that this thesis focuses on the first part of the project only.

As already quoted above, the first part of the mission is “the conduct of a program of mass development of flight by all disabled people through a European network of wind tunnels (...) whose aim will be to innovate, experiment and disseminate best practices in accompanied discovery flight, in solo progression and then in autonomous competition.” Moreover, the statement that the project should „serve as a springboard for a worldwide dissemination“ will be used as a base of the evaluation. (EUROPEAN COMMISSION. Développement de masse du vol en soufflerie en faveur des personnes en situation de handicap.)

In the research the focus will be therefore given to

- A) whether this project has helped to spread the information that wind tunnel flying is an activity suitable for people with disabilities;
- B) whether wind tunnel flying nowadays really is and also is perceived as an activity and sport suitable for people with disabilities;

And mainly in case of qualitative research also to:

- C) what could have been done differently and better within the #WH project in order to better accomplish its aims.

“Research involves a systematic method to obtain facts, figures, and supporting content. (...) Approaches to research are quantitative (numbers oriented) or qualitative (values based).” (Thomas 2015:97) Research can also be combined which is what is chosen for this evaluation. The reason is to be able to look at the #WH project from different perspectives, therefore gain more reliability for this research and also because both – quantitative and qualitative data – can be accessed well in this case. However, combined research “is not merely a process of collecting two distinct types of data – quantitative and qualitative – the researcher needs to merge, integrate, link and embed both separate types of data”. (Skinner, Edwards, Corbett 2014:9). That work with gained information is shown in the fifth chapter of this thesis.

### **3. QUANTITATIVE ANALYSIS**

#### **3.1.Methodology**

Quantitative approaches to sport management research are more traditional (Skinner, Edwards, Corbett 2014:8-9). The researcher commonly asks narrow, close-ended questions, collects quantifiable data from participants of the research, analyses them and aims to conduct the whole research in an unbiased, objective manner even. (Skinner, Edwards, Corbett 2014:8; Creswell 2014:4) Use of an original questionnaire was chosen as a method to gain necessary data in this quantitative survey. “The importance of questionnaire as an instrument for data collection in the behavioural sciences is widely recognized.” (Baruch. 1999:421) Although of course, its success depends on having the access to contact the right respondents for the specific research and their willingness to participate in the survey. Given the fact that the #WH organizer

agreed to provide and allowed to use its databases of #WH participants, including their email addresses, in order to reach those participants for the purpose of this research, the questionnaire was sent to all email addresses available. Other ways of sharing the questionnaire were also tried but the first one proved to be the most effective.

### **3.2.Respondents**

The #WH organizer has provided a list of all the flights realized in different European wind tunnels under the #WH project up to the end of April 2022 and also a list of flyers that have registered as competitors for the #WH event. In the list of realized flights there were 2816 reported flights of two minutes realized by 1146 people divided into eleven European nationalities and twelve categories of disability (including intellectual impairment). In the registered competitors' list, there were people divided into seventeen nations (sixteen of them European + Canada).

Unfortunately, not all the #WH partners have reported email addresses for all the flyers. Two #WH partners often filled in its general email address. Therefore, out of the list of realized flights it was possible to extract only 664 unique email addresses (out of which 49 were not functional). In the registered competitors' list, there were 58 email addresses. As already stated, the organizer has agreed that they all could be used for the research of this thesis and so they were.

“The use of the questionnaire as a research instrument for the acquisition of information can rarely provide a full set of data – only in the case of 100% response rate (RR).“ (Baruch 1999:422) In fact, for several reasons, not a high response rate was expected in this quantitative research. To start with, generally in case of quantitative surveys send by email, the researcher usually has no control over who responds (Skinner, Edwards, Corbett 2014:253), also response rate is usually lower in case of mailed questionnaire than distributed (Baruch 1999:433). Furthermore, because as the flying within the project began at the turn of the year 2020/2021 some participants have flown months ago and therefore might have lost its interest in this project by the time of the survey. And last but not least, in an effort to avoid any semantic errors in translation, questionnaires were sent only in English, but certainly not all the participants speak English which certainly has resulted in a lower response rate. This was confirmed by some direct email answers received as a reaction to the email sent to the potential quantitative survey respondents including the questionnaire. These answers said specifically that they could

not help due to their lack of knowledge of English. The expectation of the lower response rate as the cause of the language barrier was pointed out also by the #WH organizer prior to commencement of sharing of the quantitative questionnaire. Nevertheless, “there is no agreed norm as to what is or what may be received an acceptable, reasonable RR.” (Baruch 1999:42). Therefore, for the purpose of this thesis, it was decided that even a small response rate will be worthwhile, as it could provide quantifiable data from #WH participants, and those can serve as a reference point or a comparison point to the qualitative research results and act as some sort of control mechanism.

On the other hand, as only tens or hundreds of answers could have been expected, the questionnaire could include some open options for respondents to elaborate their replies to some extent. It was a possibility of one’s own answer in case of two questions and three questions asking for an explanation of one’s opinions or intentions.

### **3.3. Questionnaire**

The quantitative questionnaire was introduced by a short explanation of the reasons for the survey. It was stated that the research is anonymous and that there will be a possibility to receive the thesis in case of interest. There was also a thank you in advance and of course, the name of the author of the research.

There were seven questions and four additional questions in the questionnaire. The opening ones asked about one’s experience regarding his/her participation in #WH project and whether he/she had tried wind tunnel flying before. If the respondent answered „no“ to the second question, he was asked for the reason of that. Following, the respondents were asked about their opinion of the suitability of wind tunnel flying for people with disabilities and again, if they did not see the activity as suitable they were asked the reason for that. The fourth and fifth questions were oriented on the spreading of the information about the existence of wind tunnel flying as an activity available and also suitable for people with disabilities. Respondents were asked whether they have shared their experience and if to a rather small or big extent. Also, they were asked whether they did or would recommend wind tunnel flying to other people with disabilities. In case of a negative answer to the fifth question, there was another additional question asking about the reason. The last two questions concerned the future. The respondents were asked if they are planning to go wind tunnel flying again in the future and if they see wind tunnel flying as a sport which people with disabilities can compete in. In case of negative

answer to the last question, there is another additional one allowing to state the reason for such answer. A full transcript of the questionnaire is included in this thesis as an annex no. 1.

The questionnaire is finalized with a possibility to leave an email address in case of interest in receiving the thesis<sup>3</sup> and again there was a thank you to the respondent.

### **3.4.The quantitative survey realization**

On the 1<sup>st</sup> of May 2022, an email that is included in this thesis as an annex no. 2 was sent to the email addresses provided by the #WH organizer. The email included a link to a questionnaire created with Google Forms. Furthermore, on the same day, following a recommendation of Jenny Rowley to “direct respondents to the web survey via personalized or group emails, and postings on discussion groups” (2014:322), upon agreement with the #WH organizer, an email regarding the survey was also sent to the official #WH discussion email thread. This thread was started in April 2021 and by the time of the survey it had 48 recipients. The email wording is included in this thesis as an annex no. 3.

Two days after sending the questionnaire to the available email addresses, the response rate was over 6,5%. There were 44 answers, supposedly as a reaction to the email sent to 673 email addresses (without counting those from which a response was received that the receiver was not found). However, some of the email addresses were listed twice as they appeared on both lists – the list of people who have flown as first-time flyers and the list of people who have registered as competitors for the #WH event.

In order to gain more feedback information, the #WH organizer was asked to share the questionnaire on the HANDI FLY International Facebook page. The is not dedicated only to the #WH project but to any parascending activities, indoor and outdoor (regular) skydiving activities done by people with disabilities. At that time, the page had over one thousand five hundred followers. The #WH organizer agreed to make a post about the questionnaire. The suggested and published text of the post was: “Have you flown under the #Windtunnel Handifly project and would you like to help to improve wind tunnel flying for other people with disabilities? Please, answer this short questionnaire: <https://forms.gle/1BioqgFPUQZZCqyM6> It will take just a couple minutes and hopefully it will give valuable feedback to the #WH organizer. Your answers will remain

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<sup>3</sup> Two respondents were interested in that.



confidential.” The #WH organizer just added hashtags, tagged the #WH partners and made the post on 3<sup>rd</sup> of May 2022. It has not caused a very considerable increase of responses. In the following 24 hours, there were only three new responses of the questionnaire. In the following four days, there were only five new answers in total. Also, answers to one of the question and follow-up question showed that one respondent has not flown under the #WH project neither has he tried wind tunnel flying yet. Despite that fact, he has participated in the quantitative survey. It is assumed that he/she has been reached with the questionnaire by the post, based on his response where he/she stated that he/she has only tried “proper skydiving with Handifly in Portugal”<sup>4</sup>.

“[I]n most instances, it will be necessary to send at least one round of reminders, say a week or two after the first questionnaire “distribution“ in order to optimize the response rate,” (Rowley 2014:321). On the 5<sup>th</sup> of May 2022, when a total 54 answers of the questionnaire were received, a reminder email was sent to email addresses of all those who have according the #WH organizer registered as competitors for the #WH event except those who have already previously responded by email, so it was clear that they have already filled in the questionnaire or would not do so even if they are reminded of it<sup>5</sup>. It was 54 different email addresses. Also, another email was sent to 543 email addresses taken from the list of first-time flyers. From the original list of 664 email addresses, those which have already responded by email or those who were also included in the list of registered competitors for the #WH event were removed. Wording of both emails is included in this thesis as an annex no. 4. Another twenty automatic responses were received after those emails were sent stating that the recipient was either not found or the sent email was blocked.

Receiving answers through the questionnaire was ended and answering was disabled on the 12<sup>th</sup> of May 2022. The final number of responses received was 76. Therefore, the response rate was somewhere around 12,6%, as there seemed to be at the end 605 unique and functional email addresses. As described above, the questionnaire was shared by other ways too so it cannot be known exactly how many people were reached with the appeal to contribute to this research. However, based on the data about receiving answers, those other ways seemed to be much less

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<sup>4</sup> Most probably he is referring to a continuation of Handifly Euro Challenge in Évora, Portugal, 2019.

<sup>5</sup> For example, two people reacted to the first email with the link to the questionnaire by saying that they have not flown yet under the #WH project. By the time of this research they were already registered as competitors but have not done their training yet.

effective, therefore it should be acceptable to regard the response rate calculated above as sufficiently close to the reality.

### **3.5.Processing of the information obtained**

The Google Forms was used as a tool in this quantitative survey. The automatically created charts and otherwise collected and organized received responses were sufficiently processed for this survey analysis, hence it was convenient to use this tool in this case. There were only small technical issues concerning the automatically set language. It can also be said that the combination of the tool used and possibly a correct design of the questionnaire, there was no difference between returned and usable questionnaires. “Unusable questionnaires are the result of missing data” (Baruch 1999:424).

The information gained from of the conducted quantitative research was analysed, compared and connected with the qualitative research outcome, ordered thematically and the result of that can be found in the fifth chapter of this thesis. Some charts from the quantitative survey are also included there to communicate the information clearly and effectively.

## **4. QUALITATIVE ANALYSIS**

### **4.1. Methodology**

Given the specificity of wind tunnel flying and even more of wind tunnel flying for people with disabilities, it seemed inevitable to conduct a qualitative research as well. Only the quantitative research would most probably not provide enough insight information as the respondents of that research do not have a deeper understanding of the #WH project, neither wind tunnel flying as an activity for people with disabilities, its evolution, possibilities etc. Also, there is not enough theory yet regarding this field and none specifically regarding the #WH project.

Qualitative research commonly aims to explore and understand views of research participants. Open questions are usually asked and the researcher then makes interpretations of the meaning of the received data considering the complex situation from which they come. Therefore, the outcome of the research has a flexible structure. (Skinner, Edwards, Corbett 2014:8-9; Creswell 2014:4) „Contrary to widespread criticism that qualitative research is too subjective, one might argue [...] that qualitative interviewing is in fact the most objective method of inquiry

when one is interested in qualitative features of human experience, talk and interaction (at least if objectively means being adequate to a subject matter).” (Brinkmann 2013:4)

In this case, specifically, qualitative semi-structured individual interviews were planned to be conducted. “Compared to structured interviews, semi-structured interviews can make better use of the knowledge-producing potentials of dialogues by allowing much more leeway for following up on whatever angles are deemed important by the interviewee. [...] And, compared to unstructured interviews, the interviewer has a greater saying in focusing the conversation on issues that he or she deems important in relation to the research project.” (Brinkman 2014:21)

The chosen respondents are people considerably involved in the area of wind tunnel flying for people with disabilities. Their involvement is either professional and/or due to their personal interest. Also, the interviewer has knowledge and personal interest in the field to a certain extent. Hence, in this case, semi-structured interviews seemed as a reasonable choice. This kind of research could likely ensure gaining an adequate information necessary for greater comprehension of the matter which is in the centre of focus of the #WH project. It could also create an opportunity to discover possibilities of improvement.

Due to the international selection of respondents, interviews were conducted via video calls and in an effort to avoid any semantic errors in translation, all communication was done in English.

#### **4.2.Respondents**

As many flyers with disabilities were sent the quantitative questionnaire, the intention for the qualitative research was to choose mainly respondents who are more than just participants of the #WH project, but rather managers who can possibly see beyond one person’s experience with flying. However, most of the managers working in wind tunnels (and other organizations dedicated to flying and skydiving) usually do not have closer knowledge and understanding of the specifics of activities done by people with disabilities. Therefore, it was very fortunate that two respondents who agreed to help with the research are both – flyers with disability and involved in management and organization of flying projects. Moreover, they even have experience with other projects of wind tunnel flying or skydiving for people with disabilities.

Eight persons were chosen to be asked to participate in the qualitative part of this research were suggested by the #WH organizer. As France is the country from where the #WH project originated, most of the respondents were French. In order to lower biased results, it was decided that not necessarily all of the French respondents needed to be interviewed. However, at the end, the request was sent to all of them. It happened that only some of those respondents of French nationality expressed their inability to give their answer during a video call either due to their insufficient knowledge of English or lack of time. Therefore, they asked to get a list of questions and answer them in writing. That was done as it was better to have the answers in writing than not at all, however only one of those respondents did actually send his written answers back. Also, one person did not answer the request to participate in the research at all and another expressed his willingness to help but at the end the video call could not be scheduled before the finalization of this thesis.

The list of respondents is:

- Jérôme David (FRA) – Deputy National Director of the French Skydiving Federation, manager of the #WH project and HandiFly Euro Challenge project, also multiple World and European champion and multiple World record holder in skydiving / parachuting
- Maxime Granier (FRA) – Winner of the International Handifly Challenge in 2018 and 2019, French national champion in 2019 and 2021, his disability is cerebral palsy; he is also the president of HANDI'skydive association that focuses on skydiving for people with disabilities and also under his university internship he assisted with the organization of the #WH project, mainly the #WH event
- Andrea Pacini (ITA) – Event coordinator of Aero Gravity Disability Project from Aero Gravity Milan wind tunnel, paraplegic wind tunnel flyer, one of the five future competitors going to the #WH event representing Aero Gravity.
- Bas Driessen (NLD) - Manager of City Skydive Utrecht wind tunnel
- Eddy Vande Vonder (BEL) – Chief executive officer and a 50% owner of Airspace Charleroi wind tunnel
- Aurélie Borne (FRA) – Communication & sport events manager from iFly Aix-Marseille wind tunnel and/or Françoise Simons (FRA) - Chief executive officer of Aerokart Paris wind tunnel and/or Aurélien Cabezon (FRA) – Event coordinator of Weembi Lille wind tunnel

### **4.3. Questions**

Several questions were prepared for the qualitative interviews. The objective was to formulate them in a way that they do not steer the respondent's expressing opinions too much, but even according to Svend Brinkmann, „there are no such things as non-leading questions [...] it is not possible to avoid structure, nor would it be desirable, but it is possible to provide a structure that is flexible enough for interviewees to be able to raise questions and concerns in their own words and from their own perspectives.“ (2013:19) In accordance with that, the intention behind the design of the questions was to make sure to go through the most important topics, to obtain the information needed from each respondent but otherwise make an effort to create the least leading questions. That being the case, most of the questions are open-ended and all of the questions were drawn up with an intent to encourage the respondents to give rather longer and detailed answers, if possible. Moreover, at the end of all video call interviews, the respondents were asked for any more comments, but no one expressed the need to add anything.

The questions were:

- 1) Do you see #WindtunnelHandifly as a successful project?
- 2) How would you assess the set-up of the #WH project?
- 3) Is there anything that you are missing in the project set up-in order to reach more people?
- 4) Is there anything that you are missing in the project set-up in order to achieve greater development of practices and technology which could help people with disabilities to fly in the wind tunnel?
- 5) What do you think might still stay in the way of flying for people with disabilities?
- 6) What do you think about the sustainability of the motion set by the #WH project?
- 7) What advices and hopes do you have for the #WH future?

### **4.4. The qualitative survey realization**

Given the international selection of respondents, everyone was contacted by email first. They were all directly informed about the reason and main topic for the interview and that the interviews were going to be done as video calls. Also, they were told that they would be provided with the prepared questions prior to the interview. The reason for that was to allow them to formulate well informed answers as they might have needed to ask for some

information from their co-workers, local flyers with disabilities, instructors or coaches etc. It was also especially useful in case of the interview with Maxime Granier for whom, due to his physical disability which affects his speech, it was convenient that he had another person joining our video call in order to help our communication. Therefore, he has discussed his answers to the questions prior to the interview with that person and the conversation could flow much better.

As already mentioned, one respondent gave his responses in writing only as he did not feel able to give his answers during video call. Unsurprisingly, this way of interviewing did not begin a conversation, neither resulted in several additional questions or clarifications as it happened in case of the remaining interviews. Furthermore, the answers that were received in writing were very short in comparison with answers given during all the video calls. Nevertheless, any effort to contribute to the research was appreciated and useful.

Audio from all the video call interviews was recorded so that the answers could have been correctly processed in the analysis. All respondents were adequately informed about the recording and that their answers could be quoted or interpreted in this thesis.

#### **4.5.Processing of the information obtained**

The responses of all the conducted qualitative interviews and received answers were compared and connected with each other and also with the data gained from the quantitative research. It was all ordered thematically and the outcome can be found in the fifth chapter of this thesis. There, whenever it is stated that all, most or none of the respondents had certain opinion, it is meant out of those who expressed their opinion in regards of the particular matter.

An additional consult was made with the winner of the competition for flyers with disabilities inspired by the Handifly Race that was organized as a part of the Open Czech Championships in January 2022 – Gabriela Knapová regarding the tactile system which is to be used for the judging at the Handifly Race.

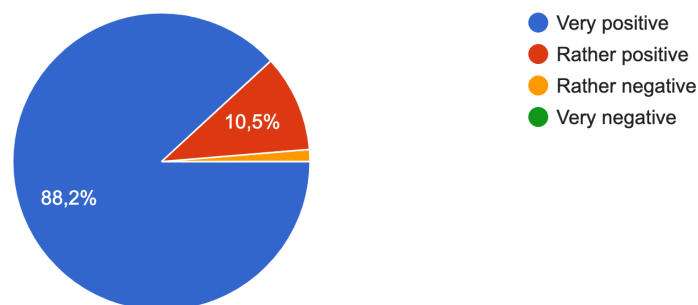
## 5. RESULTS

### 5.1. Discussion of the research outcome

In general, #WH project seems to be and seems to be seen as a successful project. All the respondents of the qualitative research agreed. “It is clearly a success,” expressed Maxime Granier. “Yes, definitely,” answered Bas Driessen when asked if he sees #WH project the same way. “The project is very interesting and well done,” said Andrea Pacini. “Extremely satisfactory results. The project is a total success on the program part (6000 flights out of the 9000 planned have already been completed). The project is also on track to be a great success in organizing the first world competition in history,” commented Jérôme David, the #WH manager, by the end of April 2022. Also, almost all the respondents from the quantitative research representing participants of the #WH project assessed the flying experience under the #WH project as „very positive“ (88,2%) or „positive“ (10,5%). Only one respondent answered “rather negative” and nobody answered “very negative”.

1) How would you assess your flying experience under the #WH project?

76 odpovědí



6

The #WH project is seen as successful even though it was affected by the unforeseeable circumstances of current years. The covid-19 outbreak has caused prolonging of the #WH project and postponing of the #WH event. Furthermore, according to Maxime Granier, the war in Ukraine was a reason for less participation than originally expected.

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<sup>6</sup> „76 odpovědí“ above the chart means 76 answers were received to this particular question. Each following chart in this thesis will have this written in Czech as well due to automatic language setting in the Google Forms tools.

In spite of these unfortunate matters, #WH project has certainly boosted wind tunnel flying as an activity and a sport practiced by people with disabilities in several European countries. For example, Bas Driessen confirmed that in City Skydive wind tunnel, they already see the outcome of the #WH project on the regular operation. “We have groups of people in wheel chairs and disabled people booking on their own.” Also, a lot of institutions are contacting them saying that they have seen on social media that wind tunnel flying is suitable for people with disabilities and they would like to do something with it. “The word is definitely getting out there.” (interview with B. Driessen)

However, wind tunnel flying for people with disabilities was not necessarily something completely new to the #WH partners and their respective countries. Certainly not to all of them as some were quite active in this matter already before the #WH project. For instance, Italian Aero Gravity wind tunnel started promoting and developing wind tunnel flying as an activity for people with disabilities four years prior to the #WH project. Around five hundred local people with disabilities have flown within this project of their own. Moreover, it was despite the fact that it was not financially supported by any institution so flyers had to have paid for their own flights. (interview with A. Pacini) This was also confirmed by the qualitative research as exactly 50% of respondents pronounced that they have tried wind tunnel flying before their participation in the #WH project. “It has been done already a long time all over the world,” said Bas Driessen as well and also mentioned that he is working in wind tunnel flying industry for more than fifteen years and that he has friends in wheelchairs so for years he himself is naturally also spreading the word that this is possible. “[...] but I think it is the first time it gets connected,” commented Bas Driessen and by that he expressed what most (if not all) the other respondents of the qualitative research believed too. Jérôme David confirmed that for example by saying that within the #WH project, there was “a delegation from Portugal that went from Lisbon to Madrid and trained.”<sup>7</sup> On similar note, Françoise Simons stated that “[...] the information [within the #WH project] flows well, being numerous in the project is beneficial for accumulating ideas”. And again, Bas Driessen commented that „this is really nice to create a kind of a base or a foundation to make something grow.“

Also, there seem to be other reasons to believe that the fact that a significant percentage of #WH participants have known this activity and have tried it before does not seem to downplay

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<sup>7</sup> No Portuguese wind tunnel has an agreement with FFP regarding the #WH Project. But Portuguese federation of parachuting does and they organized the training of Portuguese flyers with disabilities in Madrid Fly wind tunnel. (This was confirmed by the #WH organizer.)



the value of the #WH project. Among these reasons, one of the important ones is the increased visibility of the wind tunnel flying as an activity available and suitable for people with disabilities as an outcome of the project. Both – the quantitative and the qualitative research show that the #WH project has caused a promotion of that.

All the respondents of the qualitative research agreed that it is one of the things that this activity needs the most now. Bas Driessen agreed that the awareness that this sport is a possibility for people with disabilities is important, but he also believes that it „has been already pushed quite far [with the #WH Project]“. Maxime Granier expressed his believes that these activities are still not seen enough in media (at least in France) and therefore people with disabilities often do not know what is possible and accessible for them. He meant not just wind tunnel flying, but also skydiving and sports practiced by people with disabilities in general. “We must speak about it,” stated the person who helped to interpret Maxime Granier’s opinions during the qualitative interview with him. Last but not least, Andrea Pacini also said several times that he believes the promotion is the key to ensure the growth of wind tunnel as an activity and a sport suitable for people with disabilities. “We should work on the advertising and communication with the people with disabilities. [...] There are many people that do not know our sport and there are other many people that think that this sport is an extreme sport. But it is not true. It is a safe sport and available to people from four to ninety years old.” (interview with A. Pacini)

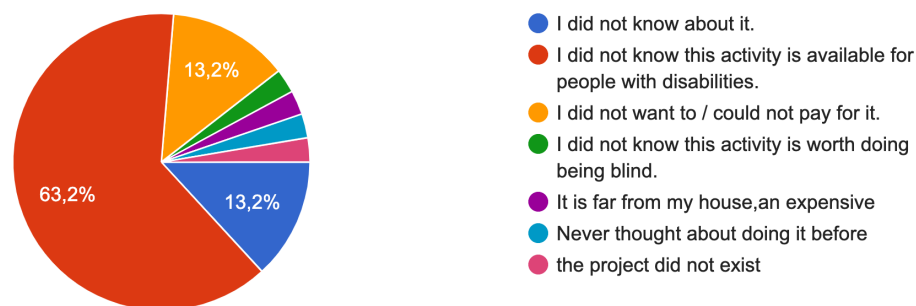
When asked for what does he believe would be the best way to promote it, Andrea Pacini talked about main stream media such as TV or newspapers but also suggested to contact hospitals, their specific departments and associations dedicated to people with disabilities and advertise wind tunnel flying in cooperation with those. Françoise Simons also gave a suggestion about how to get more visibility and that was to “expand the project to kids”. Nothing prevented individual #WH partners to implement these ideas within the current set-up of the #WH project and some of the #WH partners have actually already put them into effect. For example, Hurricane Factory Prague included in their activities under the #WH project an organization that is in English called Journey to a Dream and on its website describes itself as an organization that creates projects supporting active life of people together regardless of their disabilities and limitations or whether they have none. Also, it organized a cooperation with special school for children with disabilities and over 84 2-minute discovery flights were conducted by 42 persons from that school. Also, Bas Driessen mentioned that in case of City Skydive

Utrecht wind tunnel the information regarding the #WH project was spread to different local organizations such as revalidation clinics, wheelchair manufacturers, wheelchair skills team, organizers of wheelchair courses etc. and these organizations subsequently started a conversation with him saying that they did not know flying of people with disabilities was possible.

Taking into consideration the results of the quantitative research, all the respondents who have answered that they have not tried flying in the wind tunnel before, majority (63,2%) confirmed that it was because they did not know that wind tunnel flying is an activity available for people with disabilities and another part (13,2%) did not know about wind tunnel flying at all. Only 15,8% did not want to or could not pay for it and therefore tried the activity because it was free of charge. (One person probably did not understand the question really well and added his own answer: “The project did not exist.” Other person stated that he “did not know this activity is worth doing being blind” and another one that he “never thought about doing it before”.) That shows an unawareness and lack of knowledge regarding this activity from the side of its possible participators which was improved as a consequence of the #WH project.

#### 2a) Why have you not tried wind tunnel flying before your participation in #WH project?

38 odpovědí



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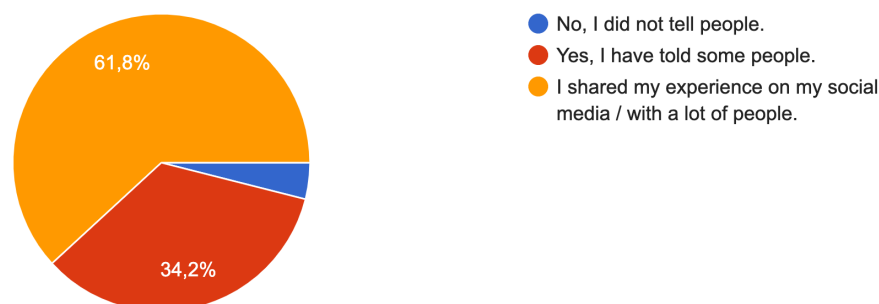
The raising visibility of the wind tunnel flying as an activity for people with disability as an outcome of the #WH project is also confirmed by answers to another question from the conducted quantitative research. 96% of the quantitative survey respondents

<sup>8</sup> There are only 38 answers in this chart as the question 2a was given and was answered by only those respondents who prior to this question answered that they have not tried wind tunnel flying before their participation in the #WH project.

pronounced that they shared their experience with other people. Majority (61,8%) even on their social media or with a lot of people. Only three respondents of the quantitative survey said that they did not shared their experience with anyone, but that might be caused by their personal tendency not to share things.

4) Have you told people about your experience of wind tunnel flying under the #WH project?

76 odpovědí



Of course, #WH project did not rely on the organic social media promotion only. The #WH project organizer took its own promotion steps and importantly, gave a financial budget to the #WH partners meant specifically for promotion and marketing. As a consequence, in autumn 2021, Windoor Realfly, a company currently running two wind tunnels in Spain „organized a special day for blind people and they had a Reuters coverage, which is a very strong media and with this Reuters coverage we had all the planet and we had massive impact everywhere,” stated Jérôme David. „We also did quite a lot of media exposure,” said Bas Driessen on behalf of City Skydive Utrecht wind tunnel and specified that is was through articles, television and social media as well. On that matter, Andrea Pacini expressed himself that in Aero Gravity wind tunnel they could use and would appreciate even bigger budget for both – promotion of this project and also flights for people with disabilities.

Regarding the budget for flying, Andrea Pacini said that in the Aero Gravity wind tunnel, used it completely and that there are still more people with disabilities who they could offer flying to. According to the official information from the organizer, they have completed 267 first flights and 133 progression flights which were originally assigned to them and then expressed their hope to carry out even more and as it was possible to allow them more, in total they flew

327 first-flights<sup>9</sup> and 173 progression flights. Jérôme David, the #WH manager said that the Italian Aero Gravity tunnel, together with the Czech Hurricane Factory and Dutch City Skydive Utrecht were the strongest partners of the project. However, not all the #WH partners were that efficient. „Few others are doing less than what we expected,” mentioned Jérôme David, the #WH manager. He also said, that it would be good to have even more partners as the ones who are more active could to a certain extent compensate for the remaining ones.

Regarding the set-up of the project, essentially none of the respondents criticized it. Bas Driessen grasped the general opinion about this by saying: “For a start it is good. For sure, with the feedback from all the people we can evaluate and make it grow, make it stronger, I guess. But for the kick off or a launch of something like this, I think they did a really good job.” Maxime Granier agreed. According to him, there is certainly space for improvements, but for the beginning it is really good. When asked what could be improved, he said that he cannot objectively see the project yet to be able to answer this question well, but from his point of view as a person who helped with the organization, he thought there were only usual organizational issues which are common with these types of events and nothing really critical. (interview with M. Granier). However, later on in the interview, he said that as for the practice developments it would have been good to have some statistics regarding these aspects of wind tunnel flying for people with disabilities from before the #WH project commencement in order to better evaluate the progress and consequently possibly come up with best practices and work on its exploitation in different locations and on its development (interview with M. Granier).

Most of the respondents of the qualitative research also agreed that there is a space for improvement in wind tunnel flying of people with disabilities in general. For example, it was mentioned several times among different qualitative interviews in regards to the used equipment. Andrea Pacini suggested that a safe communication system for blind flyers should be developed so that the flyer can fly in more autonomy as the instructor could guide him without having to touch him. This was also mentioned by Françoise Simons who stated that the project could focus also on developing “technology for the blind”. Also, Andrea Pacini, who is even personally interested in the matter, stated that “the mechanic orthoses could be improved if there is electronic technologies”. Jérôme David, the #WH manager also discussed

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<sup>9</sup> According to the amendment to the agreement made between FFP and Hurricane Factory Praha from 28 November 2020, each first time flyer could make up to 3 so called discovery flights of 2 minutes. Supposing the same rule applies to all the #WH partners, at least over a hundred people had to fly to consume this quantity of flights.

the matter of orthoses used for people with paralysis of lower body. The issue he has encountered in the course of his work on the #WH project was to have the right compromise between sufficient solidity and easy usability of the orthoses. Also, that it cannot be generalized what system is the best as it depends on the type of disability the flyer has and how advanced of a flyer he/she is. “The Canadian system seems to me to be the most suitable for people who do not have abdominals. The Czech system is good but it has the disadvantage of being metallic. The Dutch system is fragile and does not yet allow a good abdominal connection. The system used by the Prague wind tunnel with scotch and swimming chips is the best system for discovery flights with no goal of progression,” stated Jérôme David. On a related note, Maxime Granier stated that there are limits of how much can technologies do for people with disabilities in order to make their flying possibilities better and that some of these limits are not possible to overcome. “We cannot go much further,” said the person who helped to interpret Maxime Granier’s opinions during the qualitative interview with him. However, Maxime Granier also believes that at the moment, we already have a good level of necessary technology.

Certainly, the technology seems to be sufficient for regular flying as only one of the respondents of the quantitative survey responded negatively when asked about his opinion regarding the suitability of this activity for people with disabilities. Unfortunately, he/she did not give an understandable answer explaining his opinion.<sup>10</sup> When the same respondents were asked whether they would recommend wind tunnel flying to other people with disabilities, vast majority answered that they have already (69,7%) or they would (26,3%). One person said he/she would not and the reason given in the follow-up question was that among his/her friends there is nobody else with disability. Other person said that he has not tried it, so he/she cannot say. In the follow-up question he/she added that he/she has only tried proper skydiving with HandiFly in Portugal. (This shows that most probably by sharing the questionnaire on Facebook page of HANDI FLY International, it reached people who were not #WH project participants and regardless they have participated in the survey.) Another person said that the decision whether they would recommend wind tunnel flying to other people with disabilities depends on the type of disability the person to whom the recommendation might be given has. Given the fact that for example some people with intellectual handicaps might not be allowed to fly in a wind tunnel for safety reasons, this seems as a valid point. However, as only one

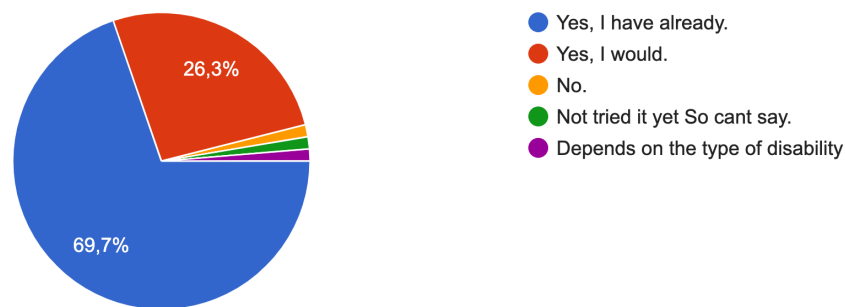
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<sup>10</sup> The answer was: „Hello I won a VR 8 second championships and French championships titles handi commen flight compares zucchini and turnips“. This might mean that the person does not agree with the format of the Handifly Race but it does not say why in his/hers opinion wind tunnel flying is not suitable for people with disabilities.

person responded this way, it might be a reason to believe that this activity would be recommended to people with most of the disabilities as most of the people with disabilities could enjoy it without any issues.

5) Would you recommend wind tunnel flying to other people with disabilities?

76 odpovědí



On the matter, Jérôme David said: “Wind tunnel flying allows a very wide range of disability categories to fly safely. [...] Finally, there are almost no more counter-indications to flight for persons with disabilities than persons without disabilities. These contraindications are common, for example fragile shoulder joints.” claimed Jérôme David. A similar opinion expressed also Bas Driessen when asked whether he think there is something that nowadays stays in the way of flying of people with disabilities: “In that regards, I think it is the same as non-disabled people. It’s an expensive sport. [...] But that is a general problem.”

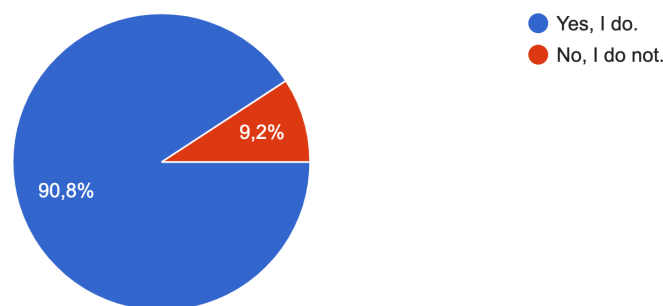
When Maxime Granier was asked about it as well, the conversation went back to the fact that the activity, its suitability and availability for people with disabilities is not commonly known. People might think that this is not possible for them because they do not have a clear idea about what they are able to do or they might not know about the opportunities for them in regards of lower costs which can be provided to them. Comparing it with skydiving for people with disabilities, when the association where Maxime Granier acts as a president organizes events where people with disabilities can try a tandem skydive for free, „sometimes it is difficult to find people that want to jump, even if it is free. Just because they do not know about it. They are not informed,” said the person who helped to interpret Maxime Granier’s opinions during the qualitative interview with him. However, there are still some real limits of the access to wind tunnel flying and also skydiving as well. For example, in case of people with intellectual disabilities due to the safety reasons. In that matter, wind tunnel offers more possibilities but it

always depends on the specific intellectual disability of each person. (interview with M. Granier)<sup>11</sup>

If the point of view is narrowed and the focus is laid on competition flying done by people with disabilities, in the quantitative research, there appeared to be seven respondents who did not see it as a possibility. Two out of those five seemed wind tunnel flying as too difficult and they did not feel under control. For one person the reason was the cost of the activity. One person said that he has never seen this as a sport for people with disabilities, but that is the goal of the #WH project – the innovation and evolution. And two people said that the reason why they do not see wind tunnel flying as a sport which people with disabilities can compete at is that it depends on the type of disability as it naturally influences the possible performance. However, that is the reason why the compensation coefficient is part of the competition rules of the Handifly Race that might be the base for any future format of the competition in wind tunnel flying for people with disabilities. Also, the remaining 90,8% of these respondents answered that they do see wind tunnel flying as a sport which people with disabilities can compete at and that certainly shows some potential for the future.

7) Do you see wind tunnel flying as a sport which people with disabilities can compete at?

76 odpovědí



Only during one of the qualitative interviews it was talked about the competition technology development. The reason for the fact that others did not talk about this as well is doubtless mainly that the #WH event which includes also the first competition in wind tunnel flying for people with disabilities of this extent has not happened yet when conducting the research for this thesis. Therefore, everyone focused on the first part of the #WH project. During

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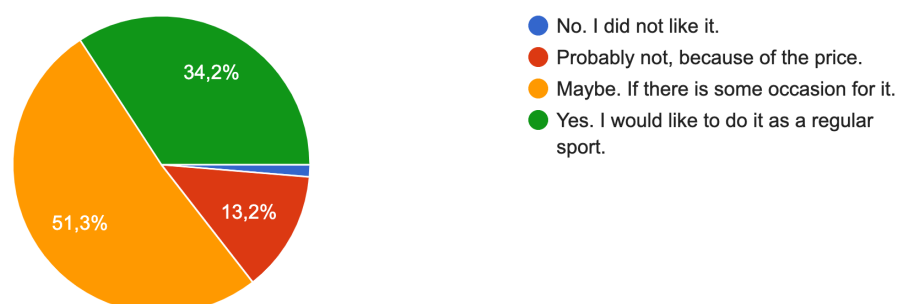
<sup>11</sup> In Hurricane Factory Prague wind tunnel, at least tens of people with intellectual disabilities have tried to fly under the #WH project and even more in general.

the interview with Maxime Granier, it was said that the tactile system which is to be used for the judging at the Handifly Race is (or at least recently still was) worked at in order to improve its functionality. The same system was already used at a competition for flyers with disabilities inspired by the Handifly Race that was organized as a part of the Open Czech Championships in January 2022 and except few small issues it worked well. The winner of the competition Gabriela Knapová who is paraplegic and who already flies in the wind tunnel for several years said that the system did not react well when one was flying with gloves which is quite common and then the recommendation was added to the Handifly Race competition rules to not wear gloves. Also, the system reacts with a certain delay and from her experience it is better to wait and see if the sensor has reacted after touching it, which makes the competition performances a bit slower. On the other hand, as the system limits will be the same for every competitor she does not see it as a major problem.

Yet or maybe that is why it does not seem unrealistic that Jérôme David, the #WH manager believes that “a development will increase in the coming years. Most persons with disabilities who have tested the flight say that they have a very pleasant feeling of freedom and that they regain the use of their body as if they were valid. The time of flight, they forget their handicap.” This was also confirmed by the quantitative research. To the question whether they plan to go wind tunnel flying again in the future, only one respondent answered that he/she does not because he/she did not like it. All the remaining responses were that they plan on it and that they would like to do it as a regular sport (34,2%), or that they might go again if there is some occasion for it (51,3%), or that they will probably not go again because of the price (13,2%).

6) Are you planning to go wind tunnel flying again in the future?

76 odpovědí





“The continuation is the next step. To not let it die out or not let it fade. To keep it growing,” said Bas Driessen and added that he thinks that to keep people interested there will need to be something more. Certainly an annual or at least biennial event and possibly even some kind of „online league, where people can send a video of a routine which would be judged and then you keep people motivated“. Also, he said he believes that the competition format should change, but that he already gave that feedback to the #WH organizer some time ago. He does not like the race format as it is set now under the #WH project even though he understands why it’s been done like that. „If we talk about inclusion, why not do 2-way?<sup>12</sup>“ Then he shared his opinion that the race format of the competition is not really significantly easier for the flyer than a competition of teams. Even more so if one of the flyers is a person with disability and the other is not, even if he just flies there as a base, which might be an option. He thinks that if it would look more as the usual competition, it could be more attractive for the flyers and it would look better to the audience as well. „And then, in the end, I think, the biggest part of the inclusion should be an integration in the World Cups and the World meets. Not have a separate event. That is why I do not like the Paralympic system. [...] It is by definition not inclusion.“ He suggested we should get inspiration rather from the X Games<sup>13</sup>, where people with and without disabilities are mixed up at the event in the suchlike way as juniors are commonly mixed up with senior competitors at official national and international events of wind tunnel flying. They do not compete against each other, but they fly their rounds after each other as it is done with different disciplines as well. During the interview, Bas Driessen was happy to hear that Hurricane Factory Prague, the only wind tunnel in the Czech Republic, has already organized a competition event for flyers with disabilities within Open Czech Championships at the beginning of the year 2022. Undoubtedly, it has happened as an outcome of Hurricane Factory Prague’s participation in the #WH project.

Jérôme David, the #WH manager who was present at the Open Czech Championships 2022 stated that he dreams that one of #WH partners would organize the second edition of Handifly Race in 2023. During the interview he also suggested that it might be exactly the wind tunnel in Prague or in Utrecht or Milan. Maxime Granier’s opinion is that the #WH Project sustainability essentially depends on other countries taking over. He believes that France will

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<sup>12</sup> He is referring to an unofficial but internationally common wind tunnel flying discipline in which teams of two people compete – formation skydiving 2-way. It is based on the official discipline where teams of four compete and that is flown at World and international events under the World Air Sports Federation and commonly also at national events – formation skydiving 4-way.

<sup>13</sup> international annual sport event focused on new, progressive and extreme sports

continue to develop, but he is afraid that other countries will not “take the torch to continue”. He based his feelings about it on the Handifly Euro Challenge project. “It is quite difficult to make other countries organize it,” stated the person who helped to interpret Maxime Granier’s opinions during the qualitative interview with him. However, he has hope that it will happen. (interview with M. Granier)

What does not make it easier for other countries was explained by Jérôme David when he said that he does not think there is a possibility of another financial grand under the Erasmus+ Sports program for the continuation of the project. As the first reason he stated that this way of getting financial support is very laborious and time-consuming. “For having the foundation, it needed from myself one complete year of work.” As the second reason, he remarked that Erasmus+ Sports program does not support organization of competitions and that it is the reason why the #WH project is more complex and includes other parts than just the Handifly Race competition. “They need projects with innovations and some more things than only competitions. [...] If we had only asked for organizing this competition, maybe we could not have the funding.” Jérôme David also said that it is of course possible to try but that it would already be too late for 2023.

Regarding the continuation of the #WH project, its predecessor - Handifly Euro Challenge, project focused on skydiving for people with disabilities, could set a good example. It was planned in a similar way as #WH project but in a smaller extent and it did continue for three more years - in Minsk (2017), Moscow (2018) and Évora, Portugal (2019). And none of those events was financially supported by EU. They were supported by national federations (including the FFP). Therefore, Jérôme David believes that regardless the fact that there will most probably not be a support of the future competitions for flyers with disabilities from the Erasmus+ Sports program, those #WH partners who are the most active, could keep the motion going. Also, if there is a continuation event, it does not have to be as big as the first Handifly Race. Jérôme David also believes that it could be less expensive for the organizer than this first year, due to the fact that some competitors could already have the motivation to be willing to pay for themselves to participate.

When asked about the possibility of City Skydive Utrecht wind tunnel organizing an event following the #WH project aims, Bas Driessen said that they certainly think about it, but that the fact that a wind tunnel is a business company needs to be borne in mind. City Skydive Utrecht successfully run two tunnels which are visited by many customers and they are for clear

reasons their priority. There is no business model in creating competition in wind tunnel flying for people with disabilities which certainly is a major obstacle in the #WH project future. Nevertheless, that applies to competing in wind tunnel skydiving in general. (interview with B. Driessen) An option could be to discuss the possibilities of financial help from sport federations or other governing bodies. Also, adding a competition in wind tunnel flying for people with disabilities to the regular yearly competition in indoor skydiving could make it substantially less financially demanding and it could be an extra attraction for media, so it might be favourable overall.

As for the hope for the future of the #WH project, Maxime Granier thinks that the best would be if as many countries as possible could work together. If only one country is pushing this forward it will never improve as much as it could if more countries cooperate. Also, he hopes that one day wind tunnel flying could be part of the Olympic Games. (interview with M. Granier)

Andrea Pacini also expressed his hopes regarding possible future years of the #WH project and he wished that even people with intellectual disabilities would be allowed to participate. “Now, only the physical disability can compete.” (interview with A. Pacini) On that matter, Jérôme David, the #WH manager commented that it could, of course, be possible but that for the first year of the project it seemed easier to have all the competitors in one ranking/classification system and unfortunately that would not be achievable if people with intellectual disabilities would compete as well. “It is not possible to have a comparison of aerodynamic motor skills between motor disabilities and intellectual disabilities.” Suggested way was to have a special category for people with intellectual disabilities. However, he also said that in his mind the main goal is the evolution of not just these aspects but really anything possible and thinkable. For example, the evolution of the competition rules - “For this first event, we wanted solo competition, easy to understand and easy to train for, in any country anywhere,” explained Jérôme David and continued by saying that the competition might evolve into something closer to the formation skydiving format where teams of flyers compete or there could be more different categories. Also, according to Jérôme David, there could be an evolution of classification or even the general format of the competition. “It is not our [FFP] project, but a world community project.” (interview with J. David)

## **5.2.Evaluation results**

According to the results of both – the quantitative and qualitative research, the #WH project is perceived as a success. Although wind tunnel flying as an activity that can be done by people with disabilities was not unknown to wind tunnels, other related organizations and people who are interested in this field before the #WH project originated, based on the research results the #WH project undoubtedly supported growth and benefited wind tunnel flying as an activity for people with disabilities, apart other things by promoting it and bringing people who work and are interested in it together.

Narrowing the attention again to the aspects which the conducted research was planned to be focused on, after the research conclusion, it can be claimed that the #WH project has helped to spread the information that wind tunnel flying is an activity suitable for people with disabilities (at least around Europe). That information was spread by the activities of #WH organizer itself, but also by several hundreds of #WH participants, #WH partners, and importantly also by local and even international media. There is also an evidence that this information has then reached people and institutions that then took actions which as a result informed, offered or directly caused that more people with disabilities tried flying in a wind tunnel. Also, it is likely that the #WH event will aid the promotion even more in the future, mainly by organizing the #WH event that is planned to include the biggest competition for flyers with disabilities yet. However, undeniably more can be done in a matter of promotion and most probably it will never be considered done.

As for the second matter in which the conducted research has focused on, in accordance with the research results, it seems that nowadays wind tunnel flying is an activity suitable for great majority of people with disabilities. There only seem to be some limits in case of people with intellectual disabilities and a few physical limits to participate in wind tunnel flying that affect not just people with disabilities but everyone, such as fragile shoulder joints. Also, it can be believed that once people with disabilities are at least basically informed about wind tunnel flying, or even better if they try it themselves, vast majority also perceives the activity as suitable for people with disabilities. The only issue is that wind tunnel is still not that commonly known activity and by unacquainted public it might be perceived as an extreme kind of activity and therefore not suitable for people with disabilities. However, wind tunnels often promote themselves as providers of leisure activity that is available for almost anyone

from five years old so it might be just a matter of time for the general public to even guess that this activity could be suitable for people with disabilities as well.

The last matter that the research has focused on was what could have been done differently and better within the #WH project in order to better accomplish its aims. Any suggestions received or discovered throughout the research seemed to be of not a great importance to the persons that have suggested or mentioned them or they were not brought up by more than one person. Therefore, they are considered only as potential minor improvements of the #WH project or only suggestions of different ways that might have been better. Qualitative research respondents rather talked about what could be done in the future to keep the motion set by the #WH project alive and growing. It is all included below in Recommendations.

During carrying out the research or rather processing its results, an additional complementary way of evaluating the #WH project came to mind. It seemed that the aims and priorities of the #WH project correlated with what degree of importance the respondents of the qualitative research gave to different aspects of the project. At the first place, there were definitely the promotion of wind tunnel flying as an activity available and suitable for people with disabilities, then connecting the community around it in order to allow a cooperation and learning from each other, following by procedural and technical developments and then the work on creating a competition for flyers with disabilities.

### **5.3.Recommendations**

Recommendations drawn from findings of the analysis could be divided into two categories. First, although a considerable part of the #WH project is already done, there are still some recommendations that could be implemented in its future and second, suggestions of what could have been done differently. Those could also be used in case of carrying out any similar project hereinafter. The #WH project was created out of inspiration by a realization of the Handifly Euro Challenge project, therefore it is not impossible that some other project will follow.

Starting with recommendation for the future of the #WH project, it is necessary to say that wind tunnel flying is not an inexpensive leisure activity and that certainly stands in the way of the growth of its availability for people with disabilities. The #WH organizer could help with this by creating a list of tips and advices regarding possibilities that can be explored

at different locations. The #WH organizer could take the advantage of all the contacts already gathered and provide the list not only to the #WH partners but to as many wind tunnels and organisations dedicated to wind tunnel flying around the world as possible. On the list there could be for example a suggestion to ask their local governments, sport federations and organisations that work with people with disabilities or any other organisations for funding for flyers with disabilities. Another advice could be to organize a self-promoting event where people with disabilities would fly for free in exchange of allowing the organization to use and publish photos and videos from the event and that it should be connected with a press conference and presence of media representatives. Moreover, this can be boosted by inviting famous people, for instance Paralympians or even people with no disabilities who are just keen to help people with disabilities. An extra advice given in regards of regular flyers with disabilities could be adding a competition dedicated to them to a regular wind tunnel flying competitions and making it open to international participation as that should not add too much of a cost for the organizer and it could even increase local media interest in the event.

A similar document that could be created and shared in order to aid a development of wind tunnel flying as an activity available for people with disabilities might be a description of best practices, technical, procedural and promotional tips and other things learned throughout the course of the #WH project. For example, in case of technical tools used for flying of people with paralysis of lower body, the advantages and disadvantages of each available orthoses can be listed and explained and a low-cost system of foam noodles that are usually used for swimming pool activities and a duct tape can be suggested for those who do not have a sufficient budget for other options. These kinds of documents would be just a continuation of the effort that the #WH organizer has made in order to disseminate best practices worldwide, interface already running implementations of wind tunnel flying as an activity suitable for people with disabilities or possibly even creating new ones.

Another recommendation to the #WH organizer is to talk with the #WH partners about the possibilities of organizing an event following the #WH event and/or hosting future competitions for flyers with disabilities (exclusively or not). At the same time, different benefits, possibilities and options how to not make it only an added and unnecessary expense for the organization should be expounded. This has not been done yet, at least not in an official way. On the other hand, competition for flyers with disabilities always did and without a doubt will keep growing slower than wind tunnel flying as a leisure activity that people

with disabilities can enjoy. Therefore, if some wind tunnel does not see organizing of competitions for people with disabilities as something that works for them, they can focus on the leisure wind tunnel flying only until their view on that or the situation changes. Supporting the activity however possible will help its natural development in other aspects as well.

Following are the suggestions of what could have been done differently in the #WH project or possibly could be improved in similar projects that might be carried in the future. The first one needs to start with the fact that the #WH project could not be successful without cooperation of several European wind tunnels as its partners. Therefore, the project needed to be appealing to them and an appropriate level of requirements had to be in place in order not to discourage them. However, a graduated system of motivational rewards could have been included in the project in order to ask more from the partners. The rewards could have been higher budget for flying and/or promotion, additional budget for technical developments or a possibility of bigger delegations going to the #WH event. Additional funding for flying and bigger delegations were granted to some of the partners, but it was based on asking and the fact that the original budgets and slots were fully used, which of course means that those partners were active, but maybe they could have been asked for more in exchange.

As one of the main goals of the #WH project is the promotion of wind tunnel flying as a leisure activity and also a sport for people with disabilities, #WH project partners could have been encouraged within the system of motivational rewards to begin a promotion cooperation with different kinds of organizations whose mission is help to people with different disabilities (hospitals, rehabilitation centres, sport associations for people with disabilities etc.). Also, as another aim of the #WH project is innovation, #WH partners could have been motivated by the same way to help with searching for new solutions or technologies allowing improved experiences for flyers with disabilities or even just providers that could come up with them at favourable costs.

Regarding the competition wind tunnel flying for people with disabilities, some kind of possibility of online competition could have been created and offered to the flyers that are registered as competitors for the #WH event. It could have served as a motivation for the flyers and also to let them see the level of others who they will be competing with at the #WH event. To the #WH event organizer, an online competition could have served a source of information regarding technology and maybe even other aspects and also help to clarify their expectations

of the Handifly Race, part of the #WH event. Moreover, in some way, it could continue to the future, even after official conclusion of the #WH project.

## **CONCLUSION**

The goal of this thesis was to evaluate the first part of the #WH project a possibly even support it by creating a valuable feedback to the #WH organizer and others. Both, the qualitative and the quantitative research showed that even if there was a space for improvement within the #WH project and that its centre of attention – wind tunnel flying as an activity available and suitable for people with disabilities was not unknown prior to the initiation of the project, #WH project is a successful one. It addressed all the matters that are considered important and it supported the growth of the activity and the sport in several ways, mainly by working on and helping with the promotion of it and by creating a platform where organisations and people that are involved and interested in wind tunnel flying as an activity practiced by people with disabilities could connect, share ideas, learn from each other, discuss, compare etc.

The research also confirmed that wind tunnel flying is an activity available and suitable for people with disabilities. Moreover, once people get at least basic information about it, it is also seen as such. The spreading of that information is something that wind tunnels, other organizations and even other projects keep working on for several years and #WH project has supported them in it as well.

There were also suggestions discovered throughout the research that still could help the #WH project or could have made it more effective and might help similar projects carried out in the future. Within the first category, it was recommended to create official documents with advices, tips, description of best practices and other things learned by the #WH organizer during the process and share these with its contacts. Moreover, it could be useful to talk with #WH partners about organizing events and competitions for flyers with disabilities in the future. As for the second category of recommendations, a system of motivations for the #WH partners could have been implemented into the #WH project set-up and based on that, #WH partners could have been asked to make an extra effort for example in the promotion of the #WH project



or by helping with technical developments. Last but not least, an idea of online competition for flyers with disabilities could have been explored and implemented.

The research of this thesis was focused almost exclusively at the community created around the #WH project and its participants who are people engaged and therefore familiar with the matters of physical or intellectual disabilities. Another way to look at and gain more useful information regarding the #WH project and the activities it is devoted to could be asking general public regarding their views and opinions of wind tunnel flying as an activity suitable for people with disabilities. However, they most probably could not talk specifically about the #WH project as its size might not be enough to have reached them, so it would be rather useful for a study about wind tunnel flying as an activity for people with disabilities in general. For the purpose of this thesis, hopefully the most useful sources were explored.

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## LIST OF CHARTS

Chart no. 1: Responses to the question from the quantitative questionnaire: “1) How would you assess your flying experience under the #WH project?”

Chart no. 2: Responses to the question from the quantitative questionnaire: „2a) Why have you not tried wind tunnel flying before your participation in #WH project?”

Chart no. 3: Responses to the question from the quantitative questionnaire: “4) Have you told people about your experience of wind tunnel flying under the #WH project?”

Chart no. 4: Responses to the question from the quantitative questionnaire: “5) Would you recommend wind tunnel flying to other people with disabilities?”

Chart no. 5: Responses to the question from the quantitative questionnaire: “7) Do you see wind tunnel flying as a sport which people with disabilities can compete at?”

Chart no. 6: Responses to the question from the quantitative questionnaire: “6) Are you planning to go wind tunnel flying again in the future?”

## ANNEX 1

A transcript of the quantitative questionnaire created with Google Forms:

### **Questionnaire for the research regarding #WindtunnelHandifly (#WH)**

This research is a base for a thesis for the University of Economics in Prague.

The research is anonymous but if you would like to receive the final thesis, fill in your email at the end of the questionnaire.

Thank you in advance for dedicating couple of minutes to help me by answering.

Sarka Ferrerova

- 1) How would you assess your flying experience under the #WH project?
  - a) Very positive
  - b) Rather positive
  - c) Rather negative
  - d) Very negative
- 2) Have you tried wind tunnel flying before your participation in #WH project?
  - a) Yes, I have. (Followed by question no. 3.)
  - b) No, I have not. (Followed by question no. 2a.)
- 2a) Why have you not tried wind tunnel flying before your participation in #WH project?
  - a) I did not know about it.
  - b) I did not know this activity is available for people with disabilities.
  - c) I did not want to / could not pay for it.
  - d) Other answer: \_\_\_\_\_
- 3) In your opinion, is wind tunnel flying suitable for people with disabilities?
  - a) Yes, it is. (Followed by question no. 4.)
  - b) No, it is not. (Followed by question no. 3a.)
- 3a) Why do you think wind tunnel flying is not suitable for people with disabilities?

Answer: \_\_\_\_\_
- 4) Have you told people about your experience of wind tunnel flying under the #WH project?
  - a) No, I did not tell people.
  - b) Yes, I have told some people.
  - c) I shared my experience on my social media / with a lot of people.

5) Would you recommend wind tunnel flying to other people with disabilities?

- a) Yes, I have already. (Followed by question no. 6.)
- b) Yes, I would. (Followed by question no. 6.)
- e) No. (Followed by question no. 5a.)
- f) Other answer: \_\_\_\_\_

5a) Why would you not recommend wind tunnel flying to other people with disabilities?

Answer: \_\_\_\_\_

6) Are you planning to go wind tunnel flying again in the future?

- a) No. I did not like it.
- b) Probably not, because of the price.
- c) Maybe. If there is some occasion for it.
- d) Yes. I would like to do it as a regular sport.

7) Do you see this activity as a sport which people with disabilities can compete at?

- a) Yes, I do. (Not followed by another question.)
- b) No, I do not. (Followed by question no. 6a.)

7a) Why do you not see this activity as a sport which people with disabilities can compete at?

Answer: \_\_\_\_\_

If you would like to receive my thesis on #WH please fill in your email address.

Answer: \_\_\_\_\_

## ANNEX 2

An email that was sent to 673 email addresses provided by the #WH organizer as email addresses of all those who have participated in the #WH project until the end of April and all those who have registered as competitors for the #WH event:

**Subject:** Help to improve wind tunnel flying for other people with disabilities

**Body:**

Dear #WindtunnelHandifly (#WH) participant,

My name is Sarka and I am writing a thesis for the University of Economics in Prague on the project of #WH which I believe allowed you to fly in a wind tunnel. The organizer of the project was so kind to provide me with your email address.

I would like to ask you to complete this short questionnaire. It will not take more than couple of minutes and it will help me with my survey and hopefully it will also give a valuable feedback to the #WH organizers.

Your answers will remain confidential.

Here is the link to the questionnaire: <https://forms.gle/1BioqgFPUQZZCqyM6>

Thank you in advance for your time.

Sarka Ferrerova

### ANNEX 3

An email regarding the survey sent to the official #WH discussion email thread:

Hello everyone,

I am currently working on a thesis under a program of Sport Diplomacy at the University of Economics in Prague, supported by the Czech Olympic Committee.

I have just sent a short questionnaire to emails of first-time flyers who have flown under the #WH project and also those who will be competing in Marseille next month.

However, some of the addresses are not available to the #WH organizer as the #WH partners did not write them in the reporting platform.

If you could and would like to help me to get my questionnaire to more people who have flown under the #WH project (and whose addresses are not already in the #WH reporting platform), I would appreciate if you could contact me.

Kind regards,

Sarka Ferrerova

## ANNEX 4

A reminder email that was sent to 54 email addresses provided by the #WH organizer as email addresses of all those who have registered as competitors for the #WH event, except those who have already previously responded by email.

**Subject:** Fwd: Help to improve wind tunnel flying for other people with disabilities

**Body:**

Dear #WindtunnelHandifly (#WH) participant,

I am contacting you once again to remind you of the possibility to help me with my research by filling in my questionnaire: <https://forms.gle/1BioqgFPUQZZCqyM6>.

To those who already did - THANK YOU VERY MUCH.

To those who did not yet - It would take **just a couple of minutes**. Also, **after tomorrow, I will not be able to accept any more answers** as I need to process them and fulfil my thesis deadline. So please do it asap.

To those who have not flown yet - I apologise for filling up your email box. I promise this is the last email :)

Kind regards,

Sarka Ferrerova

(The first email sent was included below.)



A reminder email that was sent to 664 email addresses provided by the #WH organizer as email addresses of all those who have flown in #WH event, except those who have already previously responded by email or those who were also included in the list of email addresses provided by the #WH organizer as email addresses of all those who have registered as competitors for the #WH event:

**Subject:** Fwd: Help to improve wind tunnel flying for other people with disabilities

**Body:**

Dear #WindtunnelHandifly (#WH) participant,

I am contacting you once again to remind you of the possibility to help me with my research by filling in my questionnaire: <https://forms.gle/1BioqgFPUQZZCqyM6>.

To those who already did - THANK YOU VERY MUCH.

To those who did not yet - It would take **just a couple of minutes**. Also, **after tomorrow, I will not be able to accept any more answers** as I need to process them and fulfil my thesis deadline. So please do it asap. ☺

Kind regards,

Sarka Ferrerova

(The first email sent was included below.)