

Economic study for direct international air route from Tartu Airport

Independent research study

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Ordered by: Tartu City

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Foreword

This study has been composed at the request of the city of Tartu to assess the sustainability of direct air route from Tartu, Estonia. This request comes swiftly after the closure of the last direct international route from Tartu in October which was served by Finnair to Helsinki.

Author of this study has conducted several studies on the field of regional aviation in Europe having been employed by airBaltic, Estonian Air, Tallinn Airport, Lufthansa Consulting, Nordica, Adria Airways and Odessa Airport though having more than 10 years of practical experience on the field in various regional airlines and airports in Europe on all levels (from analyst to executive level).

In addition author has graduated Estonian Aviation Academy on the field of aviation company management, defended masters degree in Vilnius Gediminas Technological University on the field of usage of gravity model in airline planning and defended doctoral degree in Estonian Business School on the topic of sustainability of the regional airline model in the legal framework of the European Union.

During his career he has conducted studies involving Estonian public service obligation for domestic services (Lufthansa Consulting 2014), regional route sustainability from Örebro (Nordic Aviation Consultancy 2015), route sustainability study from Shannon (Nordic Aviation Consultancy 2017), sustainability of new routes from Groeningen (Nordic Aviation Consultancy 2017) and Odessa Airport new route potential (KRSI Advisory 2019).

For current study the aim is to identify if having direct flight services from Tartu is sustainable on financial basis and if not would such route carry a positive socio-economic impact. If answer for this is positive then study will focus on identifying which route would provide highest potential in terms of point-to-point and connecting traffic. In the end there will be suggestion if to announce a tender for direct services by the city and to which destination is the potential biggest.

Study is conducted on neutral principle allowing all research and assumptions to be checked and peer reviewed. Author does not compromise the integrity of the study nor has had any



direct or indirect pressure by any parties to change or amend the outcome. Author confirms that all parts of the study have been composed by himself and all references and citations have been brought out.



1. Background information

Tartu is the second largest urban agglomeration center in Estonia having 95 430 (Statistics Bureau, 2021) inhabitants and being a center for Southern Estonian region having 315 204 inhabitants (Statistics Bureau, 2021a). Larger towns in the area after Tartu are Viljandi, Võru and Valga and all of them less than 100 km away from Tartu airport making it closest airport for all of those counties (*western part of Viljandi county is potentially closer by small margin to regional Pärnu airport which currently sees limited seasonal flights however it is unlikely to see that there would be significant leakage to Pärnu as real competition would be still between Tartu, Riga and Tallinn airports respectively*).

Tartu airport was renovated using European Union funds in 2008 with renovated infrastructure being fully compliant to start regular passenger flights. Shortly after that direct services started with following examples (data provided by Tallinn Airport):

- 2009-2011 – airBaltic, Tartu-Riga, 50 seater Fokker 50
- 2009-2010 – Estonian Air, Tartu-Stockholm, 33 seater Saab 340
- 2011-2012 – Estonian Air, Tartu-Tallinn, 33 seater Saab 340
- 2011-2015 – Flybe Nordic, Tartu-Helsinki, 70 seater ATR 72
- 2015-2020 – Finnair, Tartu-Helsinki, 70 seater ATR 72
- 2022-2022 – Finnair, Tartu-Helsinki, 70 seater ATR 72

This demonstrates that several airlines have found this market interesting and feasible however profitability of such service is on the borderline. Having for more than 10 years continuous regular air service in 2020 in the midst of Covid 19 pandemic all flights were stopped by the last operator Finnair. In the summer of 2022 Finnair resumed service however stopped the service after 7 months of operations. There were several reasons for their stoppage:

- Due to Finnair strong presence historically in Asia they had traffic from Europe via Helsinki to Asia. As China is expected to open up only in Q1 2023 then this has hurt Finnair business heavily and they have had to make reductions across their network
- After Covid 19 several smaller airlines bankrupted or refocused their attention. Due to this Finnair decided to participate at domestic PSO tender where they won all 5 routes on the offer (Eklund, 2022)

Tartu city is the only other municipality in Estonia after Tallinn which has real business demand. One of the best indicators for that is average salary statistics which state that in Q3 2021 in Harju county (where Tallinn is) average salary is 1700 EUR gross followed by Tartu county with 1531 EUR gross and all other counties are below that. Estonian average salary in 2021 Q3 was 1553 EUR gross. (Statistics Bureau, 2021 b). Tartu is the only city in Estonia outside of Tallinn which is home to a ministry (Education and Research Ministry) and boosts 12 institutions of higher education including countries largest university (Tartumaa, 2023). In addition city has the only teaching hospital in the country and several medium size companies such as Olerex (643 people), Playtech (518 people), Hanza Mechanics (466) and others focused on export and logistics (Tartu city, 2019).

As a secondary center for business and the primary center for culture and science in Estonia Tartu has significant role in countries economy and reputation. Enterprise Estonia has listed one of they key developments to increase tourism (Turismistarteegeia, 2022) outside of Tallinn and push foreign direct investments more evenly across the country. Most of the city, county and state wide tourism and business development studies suggest or pre-requisite direct flight connections from Tartu.

In order to launch direct international route from Tartu a study is needed to review the potential of such a service, financial impact and best hub for it. As for any small city with limited historical demand for air routes more theoretical approach is needed. This study uses macroeconomic data and combines that with quantitative and qualitative (interviews) analysis to establish solid ground for conclusions.

2. Identification of best hub airport for Tartu

As Tartu has clearly expressed the interest to establish a international route from Tartu then one of the first questions to be answered is which route it should be. Choice of a route then can serve as basis for later analysis of the impact of such flight.

When looking at the size of the catchment area of Tartu (a bit more than 300 000 people) then it limits the potential new routes to hub airports which would enable connectivity and provision of services to more than just one destination.

When looking at airports with similar population size and service we see a pattern of the length of hub routes as per Table 1.

Table 1- airports with similar size catchment areas

City	Cathcment area population	Airport	# of total routes	furthest hub distance
Klaipeda	320 000	Palanga airport	4	753 km
Vaasa	180 000	Vaasa Airport	2	431 km
Turku	300 000	Turku airport	5	412 km
Lulea	80 000	Lulea airport	4	691 km
Aarhus	350 000	Aarhus airport	11	585 km

**Data about catchment area size comes from local statistics board information about the immediate county around it*

*** Data about the number of total routes comes from OAG schedule data for February 2023*

**** Data about the distance from airport to hub comes from great circle mapper*

Based on the table we can see that hub airports should be less than 800km away to remain commercially feasible and sustainable. This is also deemed usual profitability range for regional aircraft (up to 100 seater planes) and would be close to maximum operational

performance of the most common turbo propeller driven aircraft ATR 72 (physical range is close to 1500 km however it is used mostly for missions below 800 km). Results of such a map are highlighted on Image 1.

Image 1 800 km circle from Tartu and main hub airports in the area



Based on the map and the hub structures possible we see that there are only four potential hubs suitable for Tartu direct service and out of these three have had historical services to them: Riga, Stockholm Arlanda and Helsinki airport.

Vilnius and Tallinn airports were excluded due to not having based hub conditions met (high level of low cost flights not departing in waves hence not meeting the requirements of providing connectivity from the airport). Airports which potentially could still meet the criteria from geography perspective are Saint Petersburg Pulkovo airport, Minsk National Airport and 3 Moscow airports (Vnukovo, Domodedovo and Sheremetyevo). However in light of the sanctions imposed by EU to Russian and Belarussian carriers and structural demand from market for western destinations they will be excluded from this study.

When trying to assess the hubs and their suitability to cater for the needs of Tartu there are two major criteria to follow:

- 1) How many reasonable connections this hub can cater and hence what is the potential to serve as a hub
- 2) How big is the point to point demand (existing proven and modeled potential) to hub airport

These parameters would help to determine what is most suitable hub for the services hence providing the destination with the biggest potential.

2.1 Reasonable connections via hub

Aspect of a reasonable connection is important in this study as it is clear that Tartu is lacking access to the world hence single new route does not satisfy the local people. Following criteria have been used to assess what is reasonable and not reasonable connection:

- Time of total travel by plane should be faster than via ground methods. Effectively that means that one can fly via Warsaw to Stockholm but with 1:30 flight time to Warsaw, 40 minute connection time (at least) and 1:40 flight time from Warsaw to Stockholm the total travel time is 3 hours and 50 minutes. When travelling by bus from Tartu to Tallinn and taking the plane from there takes in total 3 hours and 25 minutes. Hence such connection is not reasonable
- When assessing connections then schedules can change and therefore for hub perspective currently is checked if that hub has a connection to destination irrespective of the timing of the hub. Further more connection has to be with a carrier which follows one of the following principles:
 - Code-sharing with hub carrier
 - Sharing same alliance with hub carrier (ensures that all agreements are in place to facilitate transfer)
 - Has strategic cooperation between carriers (for example Wideroe and SAS, Finnair and BRA, Finnair and DAT/DOT)
- Instead of providing connections to every destination it is more important to compare connections to largest destinations. Based on this Sabre ADI (global distribution system which provides passenger booking data) data for Tartu and Tallinn airport traffic was compared. Top 40 destinations were assessed in general for connectivity where as Top 10 destinations were assessed accordingly if they can be served competitively against the alternatives.

Based on these assumptions used above and the bank structures (added as separate files in connection of this study in excel format) for the month of April 2023 as of 6th of January analysis was composed for each airport connectivity. All schedule data is coming from global distribution system Sabre ADI and provided by Tallinn Airport. All market sizes are provided

by Sabre ADI and are listed in Annex 4 and Annex 5 respectively. Summary of these analysis can be found in Table 2.

Table 2 Reasonable connections via hubs

City name	IATA code	Hub carriers	TAY 40	TAY 10	EE 40	EE 10
Helsinki	HEL	AY	35	10	35	9
Riga	RIX	BT	25	9	33	9
Stockholm	ARN	SKY, DY, FR, EW	27	9	33	8
Warsaw	WAW	LO, W6	25	5	31	7

** TAY 40 means top 40 destinations from Tartu with highest passenger numbers over the years*

*** TAY 10 means top 10 destinations from Tartu with highest passenger numbers over the years*

**** EE 40 means top 40 destinations from Tallinn with highest passenger numbers over the years*

*****EE10 means top 10 destinations from Tallinn with highest passenger numbers over the years*

Based on the analysis and table it is clear that Helsinki is most suitable hub for connections which are important from Tartu and Tallinn markets historical demand side. Second best is by a small margin Stockholm and third one is Riga. Warsaw is weakest in these hub comparisons which is in line with the expectations as well. The longer the route to certain direction then longer potential back-tracking. Also based on gravity model one of the key factors is distance between the cities.

2.2 Difference between different hubs point-to-point demand

In airline business there are several different ways to segment passenger groups and revenues and they are to large extent:

- 1) Reason for travel – usually split into 4 categories which are business, leisure, visiting friends and family (VFR) and other (religious)
- 2) Flight segments – usually split into 3 categories which are point-to-point, online connecting (connections where both legs operated by same airline) and offline connecting (connections cover more than 1 airline)

- 3) Point of sale – Usually split into 3 categories which are home market (where airline is from), destination market and rest of the world (ROW)

2.2.1 Reasons for travel from Tartu

From the perspective of city of Tartu and their aim to establish international connectivity then the main segments to be considered are as follows:

- 1) Business travel for both inbound and outbound. It is critically important to enable foreign direct investments (FDI) into Tartu and at the same time sustain existing smart technology companies to sell their products in wide world so that they would not move away their office. According to approved Tartu city Vision until 2030 one of the key targets is: “Tartu entrepreneurial and living environment’s attractiveness is increased not only in Estonia but also internationally” (Arengustrateegia, 2015). This vision has been adopted by city council already 16 April, 2015 and without having international outbound service business climate targets cannot be met.
- 2) For leisure segment focus from city side is to focus on incoming tourism as currently tourism in Estonia is very heavily focused to Tallinn. Outgoing tourism is not in the focus of the route and therefore focus is on enabling level playing field with other similar cities in the Baltics and Scandinavia in terms of connectivity. These targets have been set in Tartu city vision until 2030 but also in Tartu city development plan 2018-2026 (Arengukava, 2022) and Estonian State tourism strategy has set a goal that by 2025 at least 58% of all hotel nights are spent outside Tallinn (Turismistrateegia, 2022).
- 3) For VFR segment focus on city enabling affordable and quality connectivity to specialists and leading researchers in the world. Tartu is city focused on education and innovation as it is hometown for the largest and most prestigious university in Estonia. It has been ranked by QS World University rankings 296th best university in the world and 4th in Emerging Europe and Central Asia (UT, 2023).

In order to continue to attract world level professors and scholars it is important to enable them easy and efficient connectivity to their origins. Second stage which involves their ease of going to conferences and study trips touches more under business segment.

However important part under this is also to ensure people who have left Tartu but still want to keep connection with their home town. From city perspective it is important that these people have realistic chance to keep connection in a smooth and easy way.

2.2.2 Flight segmentation from Tartu

From flight segmentation point of view the important part is to establish how big part is point-to-point(p2p) passengers. From the airline perspective (especially yield) focus is always on maximum p2p share as this revenue does not have to be prorated and remains in full for this perspective segment. In order to assess full potential for all 4 cities from Tartu there are going to be 2 parallel methods used: MIDT analysis and gravity model. MIDT analysis is based on the Sabre ADI volumes based in Annexes at the end of the study. Currently there is availability of total travel demand from Tartu and Tallinn. As Tartu demand has only limited service in 2022 and 2020 and nothing in 2021 then it is important to combine the 5 year period summary (to reduce Covid impact however also to take into account new potential structural changes in demand).

Combined 5 year average passenger volumes from Tallinn we see that ranking per p2p puts Stockholm first, Helsinki second followed by Riga and Warsaw as seen in Table 3. Tartu catchment area is 315 000 people out of 1 358 000 people living in Estonia meaning that Tartu catchment area population represents 23,2% of Estonian population hence last column indicates potential Tartu share of the traffic.

Table 3 Passenger demand from Tallinn to hubs

Destination	2018	2019	2020	2021	2022*	Total	Average	Tay %
STOCKHOLM	116 852	151 659	43 934	35 416	107 909	455 771	91 154	21 148
HELSINKI	79 272	73 990	33 036	24 524	71 333	282 155	56 431	13 092
RIGA	78 227	65 128	18 675	15 986	45 568	223 583	44 717	10 374
WARSAW	61 286	36 704	11 022	12 389	27 434	148 834	29 767	6 906

However when taking into account also passenger demand from Tartu then the picture is some-what different as seen on Table 4. Helsinki is roughly 7 times bigger than Stockholm and much bigger than Riga and Warsaw.

Table 4 Passenger demand from Tartu to hubs

Destination	2018	2019	2020	2022*	Total	Average
HELSINKI	11 437	8 238	2 140	7 002	28 816	7 204
STOCKHOLM	2 162	1 304	266	305	4 036	1 009
RIGA	524	819	148	111	1 602	400
WARSAW	633	682	128	144	1 586	396

This is expected as each route has an effect called stimulation. Meaning that if there is a direct route available then people tend to use it more than using connecting flights. Effect is mostly coming from leisure and VFR passengers and has been considered for regional and traditional carriers to be around 100-200% and for low-cost companies which stimulate the market with ultra low fares around 400-1000%. If we try to make these numbers comparable and reduce from Tartu numbers then Helsinki demand without stimulation should be 3602 passengers which would still make Helsinki 3 times bigger than Stockholm and others.

In summary biggest destination from Tartu based on MIDT data seems to be still Helsinki. From Tallinn the largest business route is to Stockholm as taking the plane from Tallinn to Helsinki does not provide time advantage compared to ferry. 2 hours ferry from city center to city center compared to 40 minute flight for which 1 hour earlier in the airport and 45 minutes from airport to city in Helsinki. On Helsinki-Tallinn route there is 6,1 million passengers (Tallinna Sadam, 2023) which means that total demand between cities is close to 6,2 million passengers. If we assume that from Tartu to Helsinki total ground travel time is according to Table 5 set at 5 hours and 21 minutes then flight connection will take 2:35 meaning that total travel time is halved. This provides a strong basis to assume that Helsinki route would be able to capture partially ferry traffic as well thus providing biggest p2p market.

2.2.3 gravity model for p2p segmentation

In network planning amongst airlines there is a method used called gravity model. It is a modelling tool to calculate the potential between city pairs where there is not so much historical demand for smaller towns such as Tartu. Original model itself is developed by Dr. Jean-Paul Rodrigue as seen on Image 2 (Rodrigue, 2020). His approach assumes that each city has a certain pull towards another and calls this pull gravity the same way as Earth is pulling every item towards itself.

The largest influencer on the strength of the pull are the distance between the cities, welfare of the cities, transportation availability between the cities and the time frame observed. It is highly theoretical but several practical applications have been made of it and method is in use amongst major airlines and consultancy companies.

$$T_{ij} = k \frac{P_i^\lambda P_j^\alpha}{d_{ij}^\beta}$$

- P , d and k refer to the variables previously discussed.
- β (beta): A parameter of transport friction related to the efficiency of the transport system between two locations. This friction is rarely linear as the further the movement the greater the friction of distance. For instance, two locations serviced by a highway will have a lower beta index than if they were serviced by a regular road.
- λ (lambda) : Potential to generate movements (emissivity). For movements of people, lambda is often related to an overall level of welfare. For instance, it is logical to infer that for retailing flows, a location having higher income levels will generate more movements (customers).
- α (alpha) : Potential to attract movements (attractiveness). Related to the nature of economic activities at the destination. For instance, a center having important commercial activities will attract more movements.

Based on the above in this study for the gravity model based on research done so far (Nõmmik, 2016) for Tartu gravity model variables will be defined as follows:

P – population from each destination whereas Tartu population will be set at 315 000

d – distance between the airport

k – defines the period which is set here at 1 year meaning that value is set at 1

β – airport passengers in categories

λ – GDP per capita in categories

α – equals here to 1 as attractiveness is assessed the same as focus of this study is business and VFR demand.

For airport passengers categories will be set so that Tartu value is equal to 1. So categories will be as follows:

- 1) 0 - 7 500 000 passengers per annum with value 1

- 2) 7 500 001 – 15 000 000 per annum with value 1,1
- 3) 15 000 001 – 25 000 000 per annum with value 1,17

In this study Riga is in category 1, Helsinki and Warsaw in category 2 and Stockholm in category 3.

For GDP per capita categories are built around the EU average nominal GDP per capita for 2022 at 37 180 USD. Based on this the categories are as follows:

- 1) 0 - 10 000 USD per capita – 0,76
- 2) 10 001 – 20 000 USD per capita – 0,85
- 3) 20 001 – 30 000 USD per capita – 0,93
- 4) 30 001 – 40 000 USD per capita – 1,00
- 5) 40 001 – 50 000 USD per capita – 1,06
- 6) 50 001 – 60 000 USD per capita – 1,11
- 7) 60 001 – 70 000 USD per capita – 1,15

All the data needed to make calculations are listed in Table 5. Data is coming from public sources and can be easily checked.

Table 5 Main data for gravity model

City name	IATA code	Population	Driving time	Airport pax in 2022	Distance	GDP per capita
Helsinki	HEL	1 500 000	5:21	12 882 861	245	53 745
Riga	RIX	920 000	3:16	5 380 779	224	21 489
Stockholm	ARN	2 400 000	15:35	18 427 286	526	56 361
Warsaw	WAW	3 100 000	11:01	14 413 889	774	20 045

Based on the above we can make calculations for each city pair. Outcome is highlighted on full year basis in Table 6. Based on this the greatest potential is to Finland where total unconstrained potential is 214 044 persons per annum. Of course potential is just one highlighting factor but gives a good indication of what could be actual market size. On second spot with almost twice less potential is Stockholm followed by Riga and Warsaw.

Numbers are for two way traffic meaning that 1 passenger travelling there and back will be counted as 2 (going there and coming back counts separately). Also this is unconstrained full potential which will also include bus traffic, cars, ferries etc. To get more precise numbers we could also calibrate and provide additional variables such as attractiveness of a city and also

analyze the bus traffic dynamics and patterns currently from Tartu. However history has shown that people travelling with bus are usually not generally moving to use planes instead as plane will still remain more expensive. Therefore for the purposes of this study outcome is sufficient to provide ranking of the results.

Table 6 Gravity model outcome for Tartu

Route	Annual
HEL-TAY	214044
RIX-TAY	12938
ARN-TAY	100370
WAW-TAY	6487

2.2.4 Point of sale from Tartu

From a perspective of point of sale on the basis of Annex 3 we can state that 70% of demand historically has originated from Estonian side. That is consistent with all the theory about route dynamics as smaller regional places usually tend to have challenges to be very attractive to attract incoming passenger flows.

That however means that this route can be successful even if the winner of the tender is not so known operator as establishing market presence and awareness in Tartu is relatively easy and cheap. However should the winner be established operator with a strong sales team there is a good chance to grow incoming tourism and business. Also as Bank of Estonia is prognosing 3-4% economic growth to Estonia in 2024 and 2025 then there is also potential for better business demand growth than currently planned (Rahapoliitika ja Majandus, 2022).

3. Socio economic impact of Tartu-Helsinki route

In order to understand if the establishment of the route is feasible from city perspective we need to analyze and see the value (socio-economic) route creates to establish maximum support under which this route is still reasonable for the city.

Basis for socio economic impact is calculation of the collective value they provide to the general public. This method allows all social, environmental, economic and financial impacts of a project to be measured in a monetary unit (Muddoc, 1986). Any socio economic study should take into account 4 different levels of impact which are:

- 1) Direct impact – in this study assessment of alternative methods for the service hence calculation of direct time lost of people travelling to alternative airport and direct employment in Tartu to cater for these services
- 2) Indirect impact – impact which is created from the spending that takes place by the people visiting Tartu
- 3) Induced impact – impact which is created from the employment of the people linked with this air service. This includes people working at the airport but also in hotels , taxi drivers, service providers etc
- 4) Catalytic impact – all the indirect impact such as people from the direct air route are consuming other services such as going to hair dresser, buying food, ordering plumber etc. Basically counting all the jobs this route would create in the area

According to the ACRP (ACRP, 2008) there are in large 3 methods to evaluate aviation related socio-economic impacts:

- 1) Input-output analysis which measures direct, indirect and induced impact
- 2) Collection of benefits method which measures qualitative and quantitative benefits and costs including saved time, reduced costs and increased business activity
- 3) Catalytic effect which measures how the supply side is supported by this new potential offering

For the impact of an airport best would be input-output method however since focus of this study is the impact of a route and its impact to local economy in Tartu area then best outcome can be expected from collection of benefits method. However this collection of benefits will

still be split between direct and indirect impact. Catalytic and induced impact is generally disregarded in collection of benefits analysis and will be done so also in this study. Basis for the impact will be qualitative inputs from interviews from key stakeholders and collection of quantitative macro-economic data which will be combined into single holistic impact. Such impact is then quantified using conservative assumptions for average salaries, costs of transportation and other influencing factors that might have impact.

3.1 Assumptions

The biggest challenge for any socio economic study is to set clear assumptions to ensure transparent and coherent interpretation. Main assumptions used in this study are:

- Average salary is considered to be only official income excluding the potential shadow economy income (Estonia shadow economy was assessed to be 19% in 2021 assessed by SSE Riga). Official salary used is set at 1500 EUR which is below Tartu level but taken to compensate for lower incomes from other regional areas
- Assumption is set that price for plane tickets from Tartu is on par with the ones from Riga and Tallinn. During a set of interviews conducted Head of aviation marketing department in Tallinn Airport confirmed that this assumption is prudent as seen from Annex 6.
- We assume for all forecasts that person travelling with the plane is the one who has average salary. This is very conservative assumption as most studies find that people associated with frequent air travel are earning higher salaries
- For travel distances for each county assumption is that all travel takes place from county center as all counties with the exception of Valga are placed centrally within the county hence equal amount of people are closer and further from the center and in Valga the center is the furthest point in the county
- For travel times following assumptions are used:
 - o For car transportation google maps general (non time specific filter) is taken
 - o For bus transportation official published scheduled time is taken
 - o For train transportation official published scheduled time is taken
- We are excluding effects which might come from the new service meaning that most likely Tartu will become more attractive for new businesses to create more jobs but this cannot be included as a founded claim and hence is excluded from this study

- We assume that all surface leakage takes place only to direction of Tallinn to have impact counted as conservative as possible. In reality it is clear that there is also significant surface leakage towards Riga which is further away than Tallinn

3.2 Direct Impact

For the direct impact we have to assess only the immediate direct activities involved. This means here that we measure:

- Hours saved by people in travel
- Fuel saved by people in travel
- Direct jobs created in Tartu airport to cater for these services

When calculating hours saved by people we can only include the people who can potentially save them meaning potential passengers. Based on the statistics provided by Tallinn Airport (Annex 1) it is feasible to expect 65% load factor for the services when using a 70 seater airplane (ATR 72).

Based on the information received by Tallinn Airport (operator of Tartu Airport) new route would create in Tartu airport following jobs:

- 1) 10 new persons in ground handling and airport part
- 2) 5 new persons to security service provision

So in direct impact we can assess also 15 new positions to be created in Tartu. For calculation basis we are using gross salary base value of 1500 EUR per month which with social taxes amount to 1995 EUR per month has an impact of 360 000 EUR per annum. This impact number is on a more conservative side due to current strong pressure on salaries and the fact that aviation sector average salary in 2017 was 1934 EUR (being at that moment 60% above state average) (Palmiste, 2017).

Combined direct annual impact with 12 weekly frequencies stands at more than 2,2 MEUR per annum and this serves as conservative number. The impact is composed of three elements as highlighted in Table 7.

Table 7 Direct Impact of Tartu-Helsinki route

Impact	Amount €
Time saved	1 135 680
Transportation saved	709 800
Jobs created	359 100
SUM	2 204 580

3.3. Indirect Impact

When assuming the indirect impact it is important to assume the impact of the visitors of the potential route. In-order to assess the impact of the potential spending in the area it is important to quantify the potential amount of people visiting Tartu. Based on Tallinn Airport statistics of current residency of Finnish routes from Tallinn then 44% of people have been Estonian residence and 56% have been from other countries (Annex 2). At the same time during the interview with Finnair (Annex 3) they stated that so far 70% had been from Estonian side. That however was for a different schedule and service hence over time this proportion could get closer to 50/50.

However based on potentially a bit more than 28K passengers per annum (one-way) and assuming that 30% of people are visitors then in total there would be 8 500 visitors coming to Tartu. Based on Enterprise Estonia assessment in 2017 average tourist coming with a plane left to Estonia 400 EUR per visit (Delfi, 2018). Based on this we can amount the total indirect impact at 3,4 MEUR when implementing direct international route from Tartu. Total results can be seen in Table 8 as socio-economic value is expected to remain between 4,5 MEUR and 6,7 MEUR per annum.

Table 8 Direct and Indirect impact results

	Base	20%	-20%
Direct	2 204 580	2 645 496	1 763 664
Indirect	3 407 040	4 088 448	2 725 632
Total	5 611 620	6 733 944	4 489 296

4. Conclusion

Based on the data made available for this study which is sufficient for analysis there is clear benefit available for city of Tartu to establish new direct international route. Based on the socio-economic evaluation study of a new potential route to and from Tartu we can see potential for 5,6 MEUR per annum from direct and indirect demand combined. It would be beneficial for city of Tartu to ensure that ratio to potential subsidy to support the route would not be more than 30% of direct impact and 10% of indirect impact meaning that it should not be more than 1 MEUR per annum.

For the evaluation of the right hub and its frequency study suggests that best route would be Helsinki followed closely by Stockholm Arlanda. Riga and Warsaw are both with significantly lower potential and should not be pursued at this stage. Helsinki and Stockholm both boost good potential for point-to-point demand and onward connections. However Helsinki is closer and hub structure there is more dominant thus enabling better connectivity.

Based on the findings author can support the idea of supporting new direct service. Based on the interviews conducted with Finnair, Tallinn Airport and city of Tartu and contacts with other airports in the area it is founded to state that without financial support there would not be new routes coming to Tartu airport. The route would have positive impact, has a chance over longer period of time to becoming sustainable and supports city and country business and tourism development plans.

When announcing the public procurement following conditions should be followed:

- 12 weekly service from Tartu to Helsinki and back
 - 6 flights leaving Tartu on Monday to Saturday from Tartu between 5.30am and 7am
 - 6 flight leaving Tartu on Monday to Friday and Sundays between 2pm and 3.45pm
 - 6 flights leaving Helsinki on Monday to Friday and Sundays between 12.45am and 2.30pm

- 6 flights leaving Helsinki on Monday to Friday and Sundays between 11pm and 11.59pm
- Aircraft on this service has to be with at least 60 seats without upper limitation
- Aircraft should be younger than 20 years of age at the time of the service
- Aircraft operator has to be EU registered and IOSA compliant however wet-lease is allowed
- Winning bid has to have a code of a IATA member on the route
- All flights have to be published in Amadeus GDS display or NDC and bookable globally
- Winning bid has to ensure through cooperation (code-sharing, interlining or own operations) ability to connect in 3 hours time of arrival from their bid connectivity to at least 5 destinations in the Top 20 destinations. Top 20 destinations are: London, Stockholm, Milan, Berlin, Vilnius, Oslo, Frankfurt, Amsterdam, Copenhagen, Paris, Brussels, Vienna, Barcelona, Düsseldorf, Warsaw, Munich, Dublin, Rome, Hamburg and Zürich.
- Operator has to operate at least 90% of the flights under operator control. For reference issues which are not under operator control are: airport closure, atc limitations, weather, strikes of any other body except for operating airline. Operations can be canceled for public holidays which do not count towards 90% target (public holiday of Estonia or Finland is sufficient excuse).

5. Executive Summary

Tartu is second largest city of Estonia which has lost its last remaining air service in 2022. City has had continuous air service from 2008 by several carriers and multiple routes however due to post-covid reduction of services there is no interested party to establish new route.

In the progress of the study several interviews have taken place which clearly establish that such a route is needed for Tartu to implement its current plans and visions. As Tartu is going to be the culture capital of Europe in 2024 and is the research and development center of Estonia then city without this would not be able to fulfill their vision for future.

Based on discussions with the stakeholders author has established that without having financial incentives there is no potential operator coming to volunteer to open new route. However based on the socio-economic study conducted city would benefit 8,5 MEUR per annum directly and indirectly combined.

Analysis taking into account existing MIDT data, availability of connections and gravity modelling of demand highlight that Helsinki would be best suited to as a hub from Tartu. It has good connectivity to the areas which Tartu catchment area needs and boosts a strong potential for stimulated business and leisure activities.

In conclusion this study finds that Tartu direct international route would be beneficial to the city, would enable city to fulfill its plans and visions adopted well before stoppage of service and does not impact significantly any other commercial service provider inside EU. Author recommends to announce the tender for the services between Tartu and Helsinki with 12 weekly service.

Reference

- 1) ACRP synthesis 7, Airport Economics Impact Methods and Models, Transportation Research Board, Washington DC, 2008
- 2) Arengustrateegia Tartu 2030, Tartu Linnavolikogu määrus 64 lisa 2, Tartu, 2015
- 3) Arengukava Tartu linna arengukava 2018-2026 eelarvestrateegia 2023-2025, Tartu Linnavolikogu määruse nr 33, 2022
- 4) Delfi, Välisturistidest kulutavad Eestis kõige enam konverentsidel käijad, 2018, <https://arileht.delfi.ee/artikkel/82997169/valisturistidest-kulutavad-eestis-koige-enam-konverentsidel-kaijad>
- 5) Ekund, Pipsa, Finnish Transport and Communications Agency, 2022, <https://www.traficom.fi/en/news/finnair-wins-tender-air-services-all-five-regional-airports>, 02.01.2023
- 6) Estonian Statistics Bureau, 2021 statistics, https://andmed.stat.ee/en/stat/rahvastik_rahvastikunaitajad-ja-koosseis_rahvaarv-ja-rahvastiku-koosseis/RV0240/table/tableViewLayout2, 02.01.2023
- 7) Estonian Statistics Bureau 2021 statistics a, https://andmed.stat.ee/en/stat/rahvastik_rahvastikunaitajad-ja-koosseis_rahvaarv-ja-rahvastiku-koosseis/RV0240/table/tableViewLayout2, 02.01.2023
- 8) Estonian Statistics Bureau 2021 statistics b, <https://andmebaas.stat.ee/Index.aspx?DataSetCode=PA004>, 02.01.2023
- 9) Muddock, S.H., F.I. Leisritz, R.R. Hamn, The state of socioeconomic Impact Analysis in the United States of America: Limitations and Opportunities for Alternative Futures, Journal of Environmental Management, Volume: 23, No: 2, Sept, 1986
- 10) Nõmmik A, Kukemelk S., Developing gravity model for airline regional route modelling, Aviation, 20(1), 32-37, Vilnius, 2016
- 11) Palmiste, G, Suur ülevaade riigi rahakotist: kõrgeimat palka maksab sotsiaalministeerium, ERR, <https://www.err.ee/633248/suur-ulevaade-riigi-rahakotist-korgeimat-palka-maksab-sotsiaalministeerium>
- 12) Rahapoliitika ja Majandus, Eesti Pank eurosüsteem, 2022/4

- 13) Rodrigue J.P, The Geography of Transport Systems, Fifth edition, Routledge, New York, 2020
- 14) Tallinna Sadam statistics 2022, <https://www.ts.ee/wp-content/uploads/2023/01/2022-Q4-KPI-EST.pdf>, 22.01.2023
- 15) Tartu city, 2019, <https://www.tartu.ee/et/tartu-ettevotete-muugitulu-kasum-ja-tootajate-arv>, 02.01.2023
- 16) Tartumaa omavalitsused, 2023, <https://www.tartumaa.ee/haridus/maakonna-haridusasutused/korgkoolid>, 31.01.2023
- 17) Turismistrateegia 2022-2025 it's about time, Majandus- ja Kommunikatsiooniministeerium, Tallinn, 2022
- 18) University of Tartu, Rankings and Surveys, <https://ut.ee/en/rankings-surveys>, 22.01.2023

Annex 1

Average load factor of Tartu-Helsinki route

Tartu-Helsinki regular route cabin factor 2015-2020

Year	Pax	OPS	Seats	Cabin factor
2015	20 708	644	43 792	47%
2016	29 311	702	47 736	61%
2017	28 710	701	47 668	60%
2018	25 530	633	43 044	59%
2019	27 871	604	41 072	68%
2020	5 606	126	8 568	65%

All data provided by Tallinn Airport on 06.01.2023.

Annex 2

Tallinn-Helsinki route residency based on ASQ study

Tallinn-Helsinki residency

ASQ study

Residency	2 019	2 022
EE	54%	44%
(blank)	6%	5%
GB	5%	9%
FI	5%	5%
SE	4%	3%
BE	4%	1%
US	4%	1%
CZ	1%	2%
NO	1%	0%
IT	1%	0%
FR	1%	3%
PT	1%	1%
CN	1%	0%
AU	1%	2%
SG	1%	0%
PL	1%	0%
OM	1%	0%
TH	1%	0%
BR	1%	0%
NL	1%	1%
CH	1%	1%
ES	1%	3%
IN	1%	1%
GR	1%	1%
HU	1%	0%
IL	1%	1%
VA	0%	1%
DE	0%	3%
MX	0%	1%
DK	0%	2%
RU	0%	9%
Kokku	100%	100%

Annex 3

Minutes of the meeting with Finnair

Participants:

- 1) Eero Pärasmäe – Tallinn Airport
- 2) Kristel Saulepp – Tallinn Airport
- 3) Perttu Jolma – Finnair
- 4) Jere Moberg – Finnair
- 5) Thomas Swift – Finnair
- 6) Juho Tuomainen – Finnair
- 7) Sven Kukemelk – Tartu city advisor

Date and time: 16.01.2023, 12.00-12.45

Venue: Teams Conference

Discussion:

Everyone doing introduction round. Tallinn airport providing description of the situation: Tartu has lost the last remaining route, no carrier so far has expressed interest and city of Tartu has asked advisor to review if there is a potential to setup public service obligation route from Tartu.

Advisor asked following questions from Finnair staff:

- 1) What were the main reasons for Finnair to drop Tartu route? – Finnair representatives replied that is due to not sufficient demand willing to pay high enough yield.
- 2) Could Finnair consider reopening the flights to Tartu on commercial basis? – Finnair representatives replied that they don't see that as a real possibility. Business demand was not strong enough to sustain operations on commercial basis .
- 3) Do You think route to Tartu could eventually become sustainable without public support? - Finnair representatives replied that positive development is possible however not in a very near future. Biggest challenge is low business demand and low average yield.

- 4) Do You see Tartu more as an inbound or outbound destination? – Finnair representatives replied that based on their experience on the route historically it was more for outbound services. 70% was people from Tartu area and 30% was coming in
- 5) What would be ideal schedule from Tartu perspective to service whole market? – Finnair representatives replied that they believe best product would be 10-12 weekly service which would include overnight schedule and afternoon flight. However such product without financial support is not sustainable

Based on this discussion Tallinn Airport promised to notify Finnair if and when any PSO would be launched.

Meeting finished 12.45pm.

Annex 4

Sabre ADI data for top 50 markets from Tallinn 2018-2022 combined

Destination	2018	2019	2020	2021	2022*	Grand Total
LONDON	196 110	225 431	70 659	59 934	129 112	681 246
STOCKHOLM	116 852	151 659	43 934	35 416	107 909	455 771
MILAN	102 601	101 490	36 059	62 435	97 194	399 779
BERLIN	59 890	120 110	41 206	33 758	70 848	325 812
VILNIUS	93 381	105 189	25 785	23 856	68 682	316 893
OSLO	97 469	101 368	33 285	25 327	56 541	313 989
ANTALYA	102 460	120 906	978	24 505	57 720	306 569
HELSINKI	79 272	73 990	33 036	24 524	71 333	282 155
KIEV	73 415	99 579	30 047	56 191	15 387	274 619
FRANKFURT	85 959	76 021	31 122	20 262	41 292	254 657
AMSTERDAM	70 124	66 076	23 209	21 743	43 486	224 638
RIGA	78 227	65 128	18 675	15 986	45 568	223 583
COPENHAGEN	59 823	66 891	20 820	20 366	42 847	210 748
PARIS	45 198	52 982	18 809	30 442	61 969	209 399
BRUSSELS	49 174	58 701	20 810	25 360	53 581	207 626
VIENNA	44 633	46 479	22 144	26 142	53 868	193 266
MOSCOW	69 036	65 360	13 499	10 171	3 701	161 767
WARSAW	61 286	36 704	11 022	12 389	27 434	148 834
MUNICH	47 201	36 841	14 031	15 553	31 685	145 310
MALAGA	23 313	35 667	7 232	26 250	30 203	122 665
BARCELONA	24 039	22 961	4 601	15 862	50 328	117 791
DUBLIN	24 899	30 278	9 901	19 190	33 361	117 629
HURGHADA	452	51 828	22 370	18 261	23 790	116 701
ROME	13 155	17 257	4 326	22 845	46 680	104 262
TENERIFE	26 420	21 006	10 025	16 912	18 921	93 284
EDINBURGH	12 785	39 138	11 333	3 933	25 284	92 474
KURESSAARE	6 132	16	1 036	34 142	50 639	91 965
NIEDERRHEIN	33 818	35 752	14 548	3 768	3 744	91 631
PAPHOS	23 396	30 382	10 341	18 512	6 682	89 313
HAMBURG	27 158	25 004	7 874	9 344	18 172	87 552
ZURICH	21 177	24 513	8 741	12 345	19 499	86 275
NAPLES	2 081	3 058	357	15 558	50 901	71 955
ISTANBUL	23 007	20 976	7 458	7 262	11 516	70 220
PRAGUE	17 146	21 726	3 712	7 673	19 878	70 136
MALTA	16 713	21 056	4 063	4 968	20 921	67 722
GOTHENBURG	23 548	17 538	5 148	7 039	10 764	64 038
MADRID	15 107	18 245	4 001	10 001	16 644	63 998
NICE	11 365	15 728	5 020	9 922	18 676	60 711
DUSSELDORF	13 972	19 015	5 666	5 020	15 192	58 865
LISBON	14 047	17 640	3 712	8 358	15 085	58 843

BUDAPEST	11 850	16 734	4 182	7 006	14 710	54 482
ATHENS	12 837	15 427	4 077	8 803	13 066	54 210
VARNA	26 042	22 174	393	830	2 109	51 547
BILLUND	7 201	10 332	2 311	6 301	23 712	49 856
ST PETERSBURG	31 390	10 428	1 915	3 973	1 354	49 061
VENICE	5 535	10 529	1 942	4 218	26 485	48 710
GENEVA	12 245	14 177	5 612	5 382	10 132	47 547
NEW YORK	12 994	16 219	2 973	4 156	9 306	45 647
GERONA	21 540	21 578	2 279	12	23	45 431
DUBAI	6 498	8 405	3 189	12 214	14 379	44 686

* 2022 numbers are for 11 months only

** For the analysis destinations which cannot be operated due to war were excluded such as: Moscow, St Petersburg, Minsk and Kiev

*** For the analysis destinations into same catchment area were combined such as: Niederrhein and Düsseldorf, Gerona and Barcelona

**** For the analysis domestic services were excluded such as Kuressaare

***** For the analysis charter destinations were excluded such as: Antalya, Hurghada and Tenerife

Annex 5

Sabre ADI data for top 50 markets from Tartu 2018-2022 combined

Destination	2018	2019	2020	2022*	Total
HELSINKI	11 437	8 238	2 140	7 002	28 816
STOCKHOLM	2 162	1 304	266	305	4 036
BRUSSELS	1 326	1 667	354	155	3 503
PARIS	1 319	1 187	222	364	3 092
LONDON	1 016	1 177	283	135	2 610
HAMBURG	852	888	142	203	2 085
GOTHENBURG	730	898	146	173	1 946
OULU	570	719	154	494	1 937
OSLO	592	878	239	166	1 875
AMSTERDAM	365	1 091	227	159	1 841
KUOPIO	689	545	116	359	1 709
MUNICH	383	881	305	77	1 646
RIGA	524	819	148	111	1 602
COPENHAGEN	580	560	70	380	1 590
WARSAW	633	682	128	144	1 586
BERLIN	541	723	117	55	1 437
VAASA	600	607	49	133	1 389
VILNIUS	436	734	129	78	1 377
PRAGUE	581	614	149	12	1 356
GENEVA	584	572	78	122	1 356
KEMI/TORNIO	660	587	101		1 349
VIENNA	509	580	160	92	1 341
KOKKOLA	641	575	97		1 313
JOENSUU	668	543	87		1 298
ZURICH	472	682	113	29	1 296
ST PETERSBURG	495	590	187		1 272
KAJAANI	611	440	114		1 165
MARIEHAMN	564	452	97		1 113
GDANSK	382	481	84	122	1 068
FRANKFURT	357	541	64	106	1 067
BUDAPEST	297	521	157	92	1 067
JYVASKYLA	478	350	88		916
DUSSELDORF	245	384	122	151	901
DUBLIN	342	334	95	126	897
TURKU	435	374	4	74	887
MILAN	334	446	69	28	878
BILLUND	278	472	116		866
STUTTGART	272	522	19		813
MANCHESTER	359	301	69	75	804
ROVANIEMI	246	244	31	279	801
MOSCOW	231	474	20		725
KUUSAMO	401	169	34	72	675

PHUKET	264	178	106		548
TAMPERE	219	264	1	28	513
ROME	162	232	5	72	470
KRAKOW	95	146	60	124	424
MINSK	140	195	52		387
HANOVER	2	281	70		353
DENPASAR BALI	178	60	74		313
EDINBURGH	90	143	52	12	298

* 2022 numbers are for 11 months only

** For the analysis destinations which cannot be operated due to war were excluded such as:
Moscow, St Petersburg and Minsk

Annex 6

Minutes of the meeting with Tallinn Airport

Participants:

- 1) Eero Pärasmäe – Tallinn Airport
- 2) Kristel Saulepp – Tallinn Airport
- 3) Sven Kukemelk – Tartu city advisor

Date and time: 23.01.2023, 15.00-15.45

Venue: Teams Conference

Discussion:

Everyone doing introduction round. Tallinn airport providing description of the situation: They had for years route from Tartu (at certain times multiple) but now they have lost the last remaining route from Tartu, They are the owners and operators of Tartu airport which is one of the 4 regional airports in Estonia.

Advisor asked following questions from Tallinn Airport representatives:

- 1) Was it surprising that Finnair decided to drop Tartu route? – When looking at the cabin factor of that route in the end then it was not surprising. The loads were in the end pretty bad. Main reasons for that were:
 - Finnair themselves are in restructuring due to Covid in China and Russian airspace closure
 - Finnair won several PSO routes in domestic Finland which reduced their regional aircraft capacity availability
 - Timings suggested to Tartu were supporting point-to-point travel but not connections

Based on the above it was clear that this route could not survive long-term.

- 2) Does Tartu-Helsinki have perspective of becoming sustainable just on point-to-point basis? – It of course depends on economical situation and how many new Finnish companies will invest in Southern-Estonia. However at this stage it is not feasible and we don't see any operator being interested to look into this
- 3) Is there any potential for a new flight service from Tartu? - As airport runway is just 1799 meters long and terminal has capacity for 100-120 passengers at a time then larger aircraft cannot serve Tartu. That leaves only regional operators as a potential service providers. We have tried to find any operator to the route and have met multiple airlines suggesting them to operate from Tartu. Even offered attractive incentive schemes to attract new flights. No airlines has shown any interest in this.
- 4) In Your opinion did Finnair make every effort commercially feasible to make route work e.g. pricing on par with other routes? – Finnair did everything they could to make the connection work. Tartu was represented in various campaigns and pricing was on par with Finnair Tallinn-Helsinki route.
- 5) What would be optimal schedule from Tartu in number of frequencies and timings? – During last time Finnair operated the route we received a lot of feedback that it is difficult to combine flights from Tartu and landing in Tallinn and vice a versa. However only 6 weekly does not offer proper connectivity. Therefore it should be between 10-14 weekly flights. Optimal seems to be 12 weekly flights. 6 flights in overnight schedule and 6 flights in lunch time gap offering best connectivity for beyond flights.
- 6) Would in Your opinion new direct route from Tartu affect Tallinn airport or other airports in vicinity negatively? Reduction of flights or jobs due to potential PSO route? – There is no impact seen for any flight operations as these small scale operations would not take away any flying passengers from Tallinn but rather reduce peoples commute with bus, private car and ferries.

In conclusion Tartu city advisor promised to make available final report once ready.

Meeting finished 3.45pm

Interview with city of Tartu city representatives

Participants:

- 1) Jüri Mölder – Tartu city secretary (J. M)
- 2) Annika Ojasaar – SA Tartumaa Turism (A.O)
- 3) Kaili Ojamets – Department of Business Development (K.O)
- 4) Sven Kukemelk – Tartu city advisor

Date and time: 26.01.2023, 11.00-12.00

Venue: Zoom Conference

Discussion:

General introduction of parties in the meeting. City advisor explaining his role and meetings conducted with Finnair and Tallinn Airport. Explaining the reason for the interview.

Advisor asked following questions from Tartu city representatives:

- 1) Is it important to city of Tartu to have international air route? Why? –
A.O – Having direct international route from Tartu is vital especially for business tourism. Without having direct international route most of international conferences and exhibitions refuse to host anything in Tartu. The keyword for tourism agency is international city. Business tourist is leaving higher revenue to city and is not out off by bad weather conditions.
K.O – From entrepreneurial point of view Tartu is periphery. Exporting industry is vital for Tartu and there are still many companies left but situation is dire. We had a study where almost 150-160 companies within our region replied. By far the highest request and development need from businesses was development of international connections. Existing companies are struggling to cope without flight options. Also university and science is suffering.
J.M – Tartu and wider Southern-Estonian region has been slowly but steadily losing population as people have left area for better jobs overseas. We have a nationwide program called “Talents home”. We hope that connectivity will enable also

development of VFR segment hence enable the Tartu people currently living abroad to keep stronger and better connection with hometown. Eventually this could lead them returning here and starting their own business and contribute with their own know-how to city development and growth.

- 2) Could instead of flight option this request filled with other means of transportation like railway and bus?

K.O – As population density in Estonia is low then we are never going to have the service quality and density like in Switzerland. Currently there is with train only single railway connection to Riga with a train change in Valga which takes more than 4 hours.

A.O – our other transportation means do not enable tourists to leave Tallinn and that is why tourism is so strongly focused on capital only. Especially conference and business tourism.

J.M – city is focused to improve also other means of transportation like development of highway and train connections however these are still years away from completion. Solutions are needed for now as situation is dire for companies. There is a strong sense of urgency to solve the issue now from local companies and university side.

- 3) If no international air route serves Tartu then can Tartu still fulfill its current visions, plans and development documents? -

A.O – From tourism point of view it is impossible to reach targets set to us without direct route. We are simply unable to attract here any major events. We will not be able to bring here any major events.

K.O – From entrepreneurial point of view it is not possible to fulfill targets. We will be unable to attract new foreign direct investments nor even keep existing one.

Situation is critical and we cannot lose time. We are on the verge of losing a lot of jobs and companies due to poor connectivity.

J.M – Tartu has combined 11 universities and colleges and science and innovation is core of city of Tartu. Every institution is constantly raising one of their largest pain point is lack of international connections. Inability to host international major conferences, symposiums and exhibitions in long run will start to hinder the science output and innovation.

- 4) Is the route meant more for tourism or business? –

K.O – Main focus is outgoing and incoming business traffic. Everything else is already secondary and just comes with the package.

A.O – For tourism flights are of course important and we would definitely push for incoming tourism as the route is anyway there but business is main.

J.M – Also VFR segment is important as people need to keep their connection with home town.

5) What are largest and most important markets for Tartu? –

A.O – A.O – The main foreign visitors in 2022 came from Finland, Latvia, Germany, Lithuania, UK, France and Sweden. For tourism marketing these markets are and have been important. In B2B and MICE (meetings, incentives, conferences and events) we focus on Finland, Sweden, Norway, Denmark, Germany, Belgium and UK. We are also act towards Asian countries and we have two cooperation projects with European destinations where a lot of Southern European destinations are participating (Impactour and Smart Tourism Destinations).

K.O – From business perspective we have 3 categories by importance. In first group there are Nordic countries with a bit bigger emphasis on Finland and Sweden whilst Norway has been growing steadily. In second category is Germany as a strong and important hub for business and export. In the last category are global connections for start-up and smaller companies to countries like China, USA, Japan and UK.

J.M – City boosts excellent relation in all Nordic countries meaning Finland, Sweden, Norway and Denmark. However there is also special relationship with Germany and mayor has himself personally pushing a lot of developments to and from Germany.

6) If the new route is realized would You change our current plans and visions?–

A.O – If new route is realized then there will be no major changes in tourism strategy. If no route is realized then we would have to change targets and focus as we could not keep existing targets.

K.O – No changes expected. Without flights plans would have to be changed.

7) What would be optimal schedule and product from Tartu to satisfy city needs? –

K.O – Minimal product is overnight schedule enabling early morning departure with good beyond connectivity and late night arrival. However this does not support incoming business demand too much. Therefore it would be useful to also have lunch time flights from Helsinki enabling morning start from Copenhagen, Paris or London and then connecting via Helsinki to Tartu.

A.O – From tourism side best would be 2 daily flights to enable different options and combinations. Just overnight flight might also not have enough seats to support conferences and major events.

J.M – From city perspective we hear from universities and companies that there is a need for 2 daily flights. Perhaps not all days for example reducing Saturdays and Sundays. However in general the need is clear from all sides and city is willing to commit to make this happen.

In conclusion Tartu city advisor promised to make available final report once ready.

Meeting finished 11.55am.