

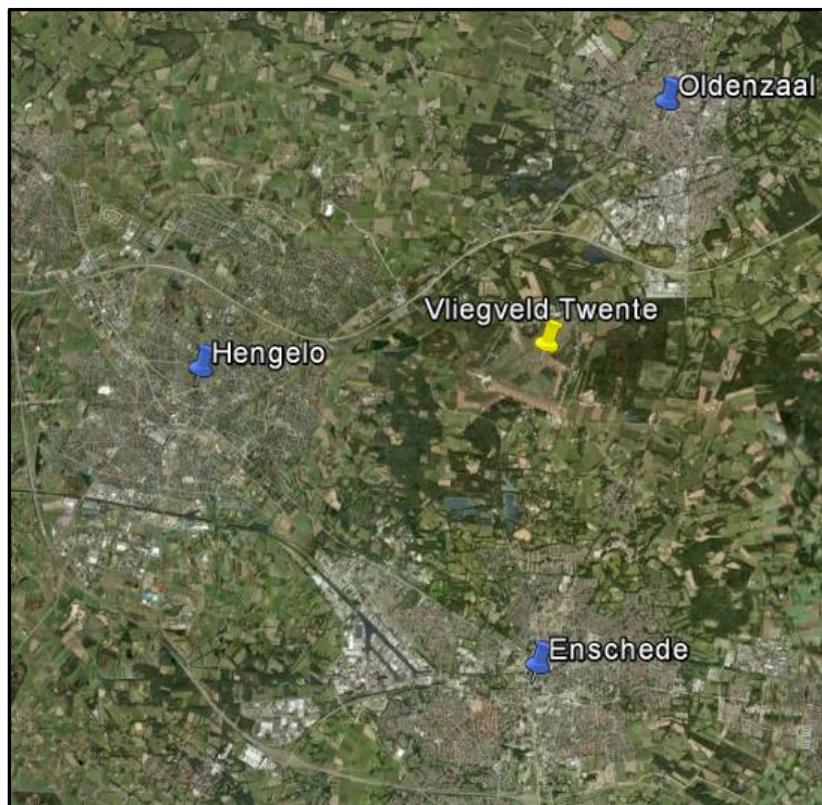
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## [THE SOCIAL IMPACTS OF THE UPCOMING CIVILIAN AIRPORT TWENTE]

KEYWORDS: SOCIAL IMPACT ASSESSMENT; SOCIAL IMPACT; PROTEST GROUP; SOCIAL LICENCE

## **Abstract**

This thesis treats about the relevance of the social impact assessment (SIA) in urban development projects. The main goal is to measure the social impacts of the construction of the civilian airport Twente on the inhabitants of the affected area (Enschede, Hengelo and Oldenzaal). This upcoming civilian airport was until 2008 mainly a military airport but commercial flights were possible too. Both qualitative and quantitative data is used, with sixty-six surveys and two in-depth interviews. One interview with a representative of the municipality of Enschede and another with a representative of the protest group 'Stichting Alternatieven Vliegveld Twente' (SAVT). Secondary data was also analyzed, such as documents given public by the government/municipality and scientific literature over the transformation of airport Twente.

Analyzing the communication between the municipalities and protest-groups/inhabitants, reasons for protests and nuisance, the main question is tried to answer. The upcoming civilian airport will cause both negative and positive social impacts such as noise caused by the airplanes, nuisance from the construction and positive social impacts such as an economic impulse, employment and ease.

## Acronyms

ACM	-	Consultant Agency
ADT	-	Area Development Twente
CCWL	-	Care, Cure, Wisdom and Leisure
DHV	-	Consultant Agency
EIA	-	Environmental Impact Assessment
KPGM	-	Financial Consultant Agency
MER	-	Milieu-effectrapportage
SAVT	-	Stichting Alternatieven Vliegveld Twente
SEO	-	Consultant Agency
SIA	-	Social Impact Assessment
VOLT	-	Vereniging Omwonenden Luchthaven Twente
VTM	-	Vliegwiel Twente Maatschappij

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## Chapter 1 - Introduction

### 1.1 Occasion

In 2003 the ministry of defense announced that all military air traffic, as a result of austerity measures, would be ended by the end of 2008. This end of military air traffic would also mean the end of the small scale commercial air traffic in this area of approximately 480 hectare. The business saw opportunities for maintaining a civilian airport for commercial purposes. For this reason, the consultancy firms ACM and DHV conducted research on the feasibility of a possible civilian airport. Both studies showed that a civilian airport was economically feasible. Former 'Vliegwiél Twente Maatschappij' (VTM), now Area Development Twente (ADT) is the field director for the area development of airport Twente and environment. ADT is a collaboration between the province Overijssel and municipality of Enschede (ADT, 2012). The government and municipality of Enschede want to create a civilian airport in this area. The original mission of VTM was transforming the existing airbase in a driving force for an economically stronger and more sustainable Twente (ADT, 2013). The protest groups SAVT and 'Vereniging Omwonenden Luchthaven Twente' (VOLT) want to maintain the nature and use it for recreational purposes. Since 2008 until now there has not been any military or civilian air traffic activity from this area. There have been ongoing debates about the new plans for this area for over the last five years. Since the 28<sup>th</sup> of March 2013 the municipality of Enschede struck a deal with a contracting authority called Aviapartner (Gemeente Enschede, 2013). Thus, the civilian airport Twente is definitely coming.

The persons who suffer the most from these endless debates are the inhabitants of the affected area (Enschede, Hengelo and Oldenzaal). SIA emerged during the 1970's as a response to the new environmental legislation (Freudenberg, 1986). "Social impact assessment and environmental impact assessment have developed as separate entities, but a full appreciation of all impacts requires a thorough understanding of all the biophysical and social changes invoked by a planned intervention" (Slootweg et al, 2001). This paper elaborates on the social impacts, caused by the upcoming civilian airport Twente, on the inhabitants of the affected area.

## 1.2 Problem

This research focuses on both the negative and positive social impacts that a project can have on the inhabitants of the affected area, caused by the transformation of the former military airport Twente into a civilian airport. My goal is to measure these impacts on the inhabitants by conducting a SIA on the affected area. To reach this goal, several aspects are taken into account such as nuisance, flight routes, employment and economic impulse. A comparison between which of the three cities have the biggest social impacts is being made. Besides measuring the social impacts, the communication between the municipalities and the inhabitants of the affected area is taken into account. Different protest groups and the reasons for these protests are also being treated. This leads to the following main question:

- What are the social impacts, of the upcoming civilian airport Twente, on the inhabitants of the affected area (Enschede, Hengelo and Oldenzaal)

Three sub questions will help to answer the previous stated main question, these three sub questions are:

1. How was the communication between the project planners, protest groups and the inhabitants?
2. What are the reasons for the protests against the civilian airport Twente?
3. Which city has the most severe social impacts?

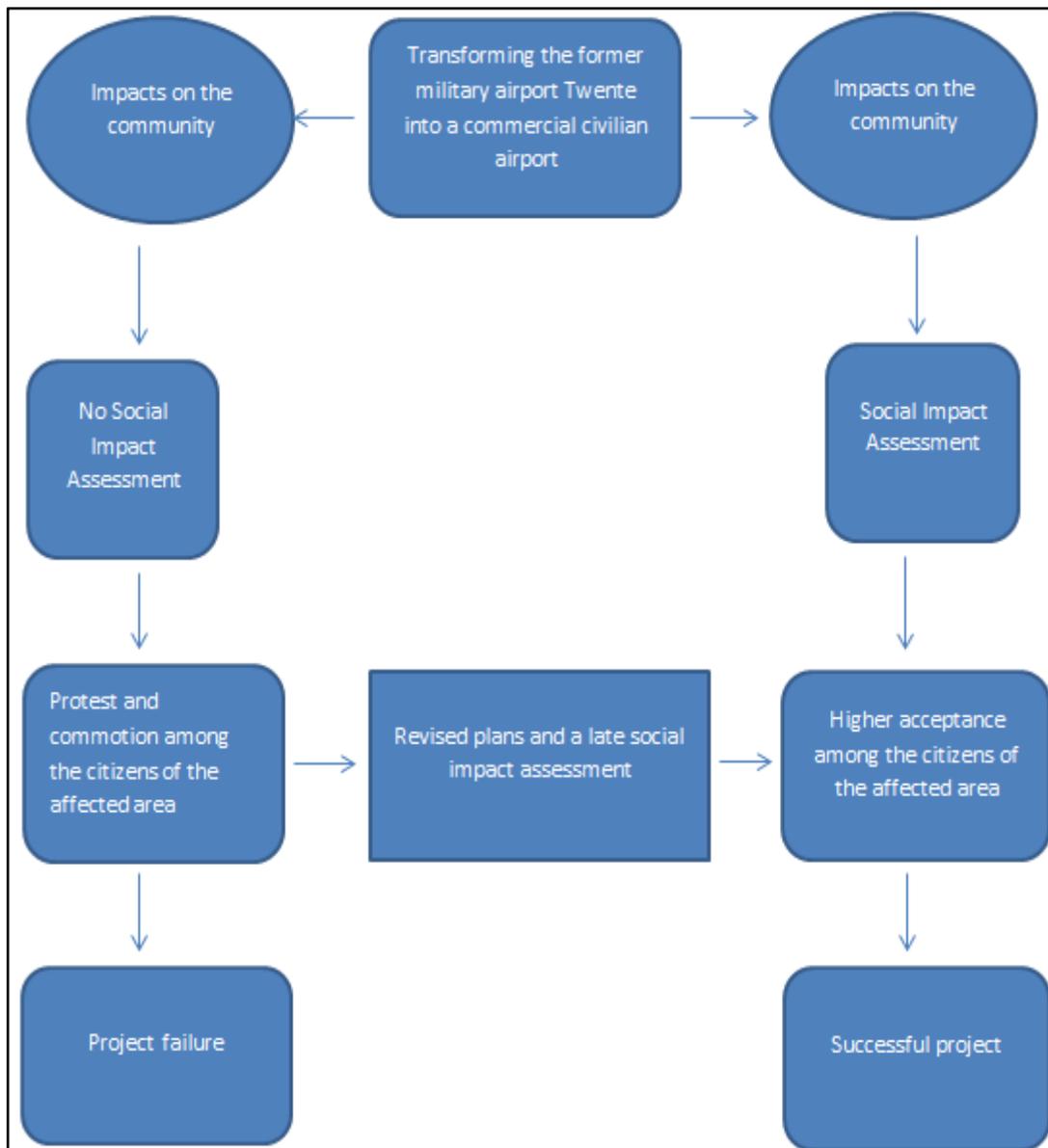


Figure 1: Conceptual model

The conceptual model that has been used to understand the social impacts is based on the work of Slootweg et al (2000) and Vanclay (2002). The conceptual model can be described as follows; a project has social impacts on the, directly and indirectly, affected communities. When a SIA has not been conducted, protest and commotion among the citizens are often more intense, as social impacts are not properly addressed. At this stage of a project there is still an opportunity to conduct a late SIA. The results of this social impact assessment can lead to revised plans, which lead to higher acceptance among the citizens and thus fewer protests. This can reduce additional costs and can eventually lead to a more successful project.

### **1.3 Structure**

This thesis is divided up in five different chapters. The first chapter is the introduction. The second chapter starts with a comprehensive theoretical framework. The theoretical framework explains the relevance of this paper. After the theoretical framework, the methodology data is presented, the methodology explains how the sub questions can help to answer the main question. In chapter three the results of the main question and sub questions are discussed on the basis of primary and secondary data. Cross tabulations produced with Statistical Package for the Social Sciences (SPSS) are used to answer the second and third sub question. Chapter four discusses the final conclusion and the final chapter includes the literature list that is used during this thesis.

## **Chapter 2 – Theoretical Framework and Methodology**

### **2.1 Theoretical framework**

This paper elaborates on the SIA. The SIA is defined as: “The processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions ... and of any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment” (Vanclay, 2012). Social impact is a rather broad term. “Social impacts include all social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society” (Burdge & Vanclay, 1995). The social impact assessment should be part of every project of a similar size. “Proper application of EIA and SIA can significantly improve the quality of project proposals and will eventually lead to important savings on project implementation because of reduced negative impacts and better acceptance of the project objectives” (Slootweg et al, 2001). Thus a proper SIA can reduce extra costs for a project. This paper makes a comparison between the negative and positive social impacts on the civilians, with a focus on the city-level scale. The literature links the social impacts of a project, where besides negative consequences also positive consequences occur, with the social license to operate. Gunningham et al (2006) see the social license as something that governs the extent to which a corporation is constrained to meet societal expectations and avoid activities that societies deem unacceptable, whether or not those expectations are embodied in law.

### **2.2 Methodology**

Both qualitative and quantitative data are used during this research. Two semi-structured in-depth interviews were conducted. One interview was done with the senior administrative advisor of the mayor of Enschede who is involved in the development of civilian airport Twente. The second interview is with a chairman of the protest group SAVT. For the ease of the reader the senior administrative advisor of the mayor of Enschede is called Respondent 1 (Interview 1) and the chairman of the protest group SAVT is called Respondent 2 (Interview

2). Besides the two in-depth interviews, sixty-six surveys have been conducted in total in the city-centers of Enschede, Hengelo and Oldenzaal. These surveys have been conducted in the afternoon over the weekend because the mixture of age groups is the largest in the weekends. The predictive analytic software SPSS has been used to quantify these surveys. All data is compiled and statistical tests have been carried out over this data. These interviews and surveys are to catch people's perception. Due the lack of time, only two in-depth interviews and sixty-six surveys were conducted. These two in-depth interviews and sixty-six surveys don't give a perfect representation of the communities opinions because the samples are too small. Nevertheless it shows the general idea of how the inhabitants feel and experience the transformation. Besides the qualitative data, policy documents and scientific literature is also used to answer the main- and sub questions. There are multiple studies conducted about the feasibility of the transformation by different independent consultant agencies, which vary in outcome. A comparison between an independent feasibility study commissioned by VOLT and the costs-benefit analysis commissioned by VTM (now ADT) is taken into account. Communication, reasons for protesting and a comparison of the social impacts between Hengelo, Enschede and Oldenzaal form the basis for getting to know the social impacts on the civilians.

An ethical problem that can occur is the subjectivity of the respondents. The position of the researcher, Lars Engelbertink, is being seen as an outsider, thus as objective as possible. I personally do live in Twente, but not in the area that is directly being affected. Some difficulties that occurred while conducting the surveys were the personal asked questions towards me about my own opinion about the transformation of the airport. Those sort of questions weren't answered and I explained that I can't and haven't picked a side because I need to stay as objective as possible.

## Chapter 3 – Results

### 3.1. How was the communication between the project planners, protest groups and the inhabitants?

Communication is an important part of a SIA. Slootweg et al. (2001) state that a SIA can improve savings on project implementation because of reduced negative impacts and better acceptance of project objectives. Proper communication can prevent protest groups from taking legal actions. In the interview with the senior administrative advisor of the mayor of Enschede (Respondent 1), he stated that the ‘wet Openbaarheid van Bestuur’ can be time-consuming when protest groups request documents from the board (Interview 1, 2013). Such requests can delay the project and when a project is delayed, it can lead to additional costs.

#### *Communication with the inhabitants*

Respondent 1 states that there has not been direct one on one communication with the inhabitants of the affected area, but inhabitants have the opportunity to visit open board meetings and or consultation hours/meetings (Interview 1, 2013). Each city arranges their own communication activities with their inhabitants. There is mutual formal communication between the college of Enschede, Hengelo and Oldenzaal to maintain the same level of communication between their inhabitants (Interview 1, 2013).

Individuals also have the opportunity to be heard. Bos (2007) states that this is possible through separate ways: directly or indirectly. Directly via oral participation in board meetings and indirectly through organizations or bodies participating in the social platform. A form of a direct way is attending consultation hours and open group meetings. Inhabitants come together and have the opportunity to discuss subjects or share their opinions with a representative of the relevant municipality. The more common used way is indirect communication through organizations in the social platform. “Dit platform bestaat uit vertegenwoordigers van diverse groeperingen in de samenleving die als belanghebbende kunnen worden aangemerkt” (Bos, 2007). Examples of such various representative groups - and the most influential ones- are SAVT and VOLT.

Besides the formal consultation hours and open meetings for the inhabitants, there also is a more informal and anonymous way to communicate with ADT. Via their website ([www.adttwente.nl/contact](http://www.adttwente.nl/contact)) people have the opportunity to file a complaint or suggestion.

### *Communication with the protest groups*

The protest groups VOLT and SAVT represent the main share of the protestors. “De vereniging stelt zich ten doel het behartigen van belangen in de ruimste zin van direct omwonenden van de Luchthaven Twente, evenals van diegenen die woonachtig zijn in de (Eu) regio waar, onder andere, (geluids)- overlast te verwachten is” (Stichting VOLT, 2013). This allows the protest groups to represent themselves in board meetings. In the interview with a chairman of the protest group SAVT, he stated that representatives of the protest group have almost attended every board meeting related the transformation of airport Twente (Interview 2, 2013).

Throughout the planning process the communication with the protest groups has always maintained. The initiative to communicate came from both sides. Respondent 1 states that:

“We hebben zeker met de gemeente Hengelo, Enschede en Oldenzaal heel veel communicatie gehad. We hebben ook steeds communicatie van onze kant aangehouden. Met zowel de gemeente Enschede, als met de projectorganisaties, eerst VTM nu ADT” (Interview 2, May 2013). Respondent 2 states in the interview that: “... Dat betekent niet dat je geen gesprekken voert met die mensen. Dus ADT voert ook gewoon met die mensen gesprekken, die mensen zijn bij alle vergaderingen. VOLT meer dan SAVT. Maar voor mij ligt dat wel een beetje in elkaar zijn verlengde. ... Deze groepen hebben recht op inspraak en ze gebruiken ook alle rechten. Ze hebben ook wat rechterlijke uitspraken gehad. .... Dus het is niet zo dat wij die buiten de deur houden. Er is alleen een ander belang” (Interview 1, May 2013).

Although there have been open meetings and consultation hours for the inhabitants, most people have a lack of confidence in the municipalities. “Participanten geven aan transparantie, eerlijkheid en vertrouwen in de communicatie over het proces en de onderzoeken rondom de luchthavenontwikkeling te missen” (Ministerie van infrastructuur en milieu, 2012).

### 3.2. What are the reasons for the protests against the civilian airport Twente?

The two main protest groups SAVT and VOLT represent the inhabitants which stand as opponents towards the upcoming civilian airport Twente. Both SAVT and VOLT have quite similar visions of how and in what form the former airport Twente should be transformed. SAVT has developed an alternative plan for the civilian airport.

But what do VOLT and SAVT exactly want? VOLT wants a decision based on real figures: “VOLT heeft geen boodschap aan de politieke ambitie van bestuurders, als dat leidt tot een gigantische verspilling van belastinggeld en de stad aan de rand van de financiële afgrond”(Stichting VOLT, 2013). SAVT pleads for alternatives: “De Stichting Alternatieven Vliegveld Twente zet zich in voor een zorgvuldige afweging van alternatieve invullingen van de voormalige militaire vliegbasis” (Stichting Alternatieven Vliegveld Twente, 2013). SEO Economisch Onderzoek carries out independent applied research on behalf of the government and companies. VOLT and SAVT have asked the ‘SEO Economisch Onderzoek’ for a second opinion about the reality levels of the projections which the municipality made.

#### *Feasibility*

The two documents ‘Het passagierspotentieel van de Luchthaven Twente’ (SEO, 2010) and ‘Kosten-batenanalyse Luchthaven Twente’ (ECORYS, 2009) are being compared. ‘Het passagierspotentieel van de Luchthaven Twente’ is commissioned by VOLT and ‘Kosten-Batenanalyse Luchthaven Twente’ is commissioned by VTM (now ADT).

In the cost-benefit analysis (2009) the province Overijssel comes to a bandwidth between the 190.000 and 5.200.000 passengers in 2020 from her chosen assumptions. The growth until 2030 is not yet included here. For the calculations of the cost-benefit analysis is chosen for 1.200.000 passengers and 30.000 ton cargo in 2030. The document ‘Het passagierspotentieel van Luchthaven Twente’ concludes that the assumption of 1.2 million passengers is not factual. “De conclusie van het bovenstaande moet zijn, dat de luchthaven Twente een realistische kans heeft om gekozen te worden in de Twentse regio zelf, maar dat deze kans snel kleiner wordt in verder weg gelegen regio’s ... Al met al gaat het dan afgerond om maximaal circa 0,5 miljoen passagiersbewegingen: 0,2 miljoen uit Twente, 0,2 miljoen uit de overige regio’s binnen 75 kilometer en 0,1 miljoen daarbuiten” (SEO, 2010). SEO (2010) states that these outcomes were established by handling the most optimistic principles. He explains the differences in outcome on the basis of a smaller catchment area.

A primary reason for the protests is the lack of confidence in the government about the economic feasibility of the project. “Een zeer groot deel van de zienswijzen gaat in op economische aspecten van de luchthavenontwikkeling. Met name de exploitatie (haalbaarheid en procedure) wordt ter discussie gesteld” (Ministerie van infrastructuur en milieu, 2012). Such differences in outcomes create a lack of confidence among the civilians.

### *Alternatives*

“De invulling van de voormalige vliegbasis is cruciaal voor onze toekomst en moet daarom een realistisch en sluitend ondernemingsplan krijgen. Voor een economisch en sterker Twente” (SAVT, 2013). VOLT and SAVT have come up with several alternatives instead of a civilian airport. Two structural visions were politically discussed, one with and one without a civilian airport. The structural vision without a civilian airport which SAVT suggested and created was based on care, cure, wellness and leisure (CCWL). The document ‘Structuurvisies vliegveld Twente tekeningen’ (2009) states that the financial consultant agency KPMG was asked to do a research about the feasibility. KPMG (2009) concluded that the concept was not feasible in the proposed form, though it had some promising elements in it.

### *What do the inhabitants think?*

Figure 2 shows the comparison between the respondent’s residence and the outcome of the question if they were proponent, opponent or stood neutral against the new civilian airport. It shows that 60,6% of the respondents is proponent, 24,2% is opponent and 15,2% is neutral.

**City \* Transformation airport cross tabulation**

Count		Transformation Airport			Total
		opponent	proponent	neutral	
City	Enschede	6 (33,3%)	8 (44,5%)	4 (22,2%)	18 (100%)
	Oldenzaal	4 (22,2%)	12 (66,7%)	2 (11,1%)	18 (100%)
	Hengelo	4 (26,7%)	9 (60%)	2 (13,3%)	15 (100%)
	Anders, wel in Twente	1 (9,1%)	9 (81,8%)	1 (9,1%)	11 (100%)
	Anders, niet in Twente	1 (25%)	2 (50%)	1 (25%)	4 (100%)
	<b>Total</b>	<b>16 (24,2%)</b>	<b>40 (60,6%)</b>	<b>10 (15,2%)</b>	<b>66 (100%)</b>

Figure 2

Figure 3 shows that 21 females and 45 males have conducted the survey. 33,3% of the females are opponents, 52,4% are proponents and 14,3% stand neutral towards the transformation. In comparison with the females, 20% of the males are opponents, 64,4% are proponents and 15,6% stand neutral towards the transformation of airport Twente. Thus figure 3 shows that there are no significant differences between the variables ‘gender’ and ‘proponent, opponent or neutral’.

**Gender \* Transformation airport Cross tabulation**

Count		Transformation airport			Total
		opponent	proponent	neutral	
Gender	Man	9 (20%)	29 (64,4%)	7 (15,5%)	45 (100%)
	Vrouw	7 (33,3%)	11 (52,4%)	3 (14,3%)	21 (100%)
Total		16 (24,2%)	40 (60,6%)	10 (15,2%)	66 (100%)

Figure 3

Figure 4 shows the opinions given by respondents when asked to explain their choice between being a proponent, opponent or being neutral towards the upcoming civilian airport Twente. The participants could give more than one keyword. From all 66 surveys, 11 different keywords were given and 82 keywords were given in total. There have been conducted 21 negative, 10 neutral and 51 positive keywords. The two main reasons for the proponents were an economical impulse (24,4%) and ease (23,2%). Both good for 76,5% (39/51) of the total positive conducted keywords. The two main reasons for the opponents were noise (8,5%) and lack of need for an airport (6,1%). Both of the previous stated reasons are good for 57,1% (12/21) of the total negative keywords. The ten neutral respondents all did not care, some because they didn’t live in the area and some because they will not enjoy the advantages and disadvantages.

### Opinion

	Frequency	Percent	Valid Percent	Cumulative Percent
Economische impuls	20	24,4	24,4	24,4
Gemak	19	23,3	23,3	47,7
Werkgelegenheid	11	13,4	13,4	61,1
Maakt me niks uit	10	12,1	12,1	73,2
Geluidsoverlast	7	8,5	8,5	81,7
Onnodig	5	6,1	6,1	87,8
Milieuvervuiling	4	4,9	4,9	92,7
Geldverspilling	2	2,4	2,4	95,1
Omhoogrekenen	2	2,4	2,4	97,5
Hangt af van de geluidsoverlast	1	1,2	1,2	98,8
Jammer leegstand	1	1,2	1,2	100,0
Total	82	100,0	100,0	

Figure 4

Figure 5 is a more general figure. It extends to the national scale, whereas the surveys show the impacts on a regional scale. Figure 4 shows the main arguments why people are for or against the development of airport Twente. It shows some overlap in arguments the participants gave while conducting the survey, but also some diversity. The most frequent positive reason and negative reason given on the surveys come back in figure 5: economic impulse and noise. An important argument for the favor of a civilian airport Twente on a national scale is the relief of Schiphol, both in the form of the amount of passengers and traffic.

*Argumenten en belangen voor luchthavenontwikkeling:*

- Luchthaven Twente zorgt voor ontlasting van Schiphol;
- Minder belasting milieu betekent minder auto's en dus filevorming rond Amsterdam;
- Meer geluidsoverlast van Duitse gevechtsvliegtuigen rondom Emmen, dan van luchthaven Twente;
- Alle steun voor de ontwikkeling! Zorgt voor extra werkgelegenheid en zet het Oosten op de kaart;
- Twente moet er komen! Twee stemmen voor;
- Zo snel mogelijk open;
- Veel succes met de ontwikkeling van de luchthaven Twente.

*Argumenten en belangen tegen luchthavenontwikkeling:*

- Nadelige gevolgen Duitse bevolking, leefomgeving, ook als startbaan niet in de Duitse richting ligt;
- Tegen luchthavenontwikkeling, voor milieubewuste inrichting voormalig vliegveld;
- Voor rustig en gezond grensgebied;
- Belasting mensen en leefomgeving is onnodig, staat niet in verhouding met de opbrengsten;
- Stadt Bentheim wordt in haar belang geschaad, milieueffecten, gezondheid etc.;
- Werkt Europese integratie in de EUREGIO tegen;
- Twente is beter af met activiteiten op het gebied van duurzame energie, kennis, vrije tijd, natuur, zorg.

Figure 5: Arguments for and against the airport development. (Milieu van infrastructuur en milieu, 2012)

### 3.3 Which city has the most severe social impacts?

Comparisons on the social impacts are being made between Enschede, Hengelo and Oldenzaal. Figure 8 shows the people per city that have encountered nuisance from the former military airport Twente. In total 31,8% of the respondents encountered some sort of nuisance and 68,2 % did not encounter any form of nuisance from the former military airport Twente. This concludes that there is a social impact on a part of the inhabitants that live in the affected area. The height of this social impact differs in each city. To make a reasonable comparison between Hengelo, Enschede and Oldenzaal both negative and positive social impacts are taken into account. Negative variables such as flight routes and nuisance and positive variables such as economic impulse and employment.

#### *Flight routes*

ADT announced to the ministry of infrastructure and environment that they wanted a ‘Milieueffectrapportage’ (MER) for the transformation of airport Twente (Ministerie van Infrastructuur en Milieu, 2012). While formulating this MER the ministry conducted opinions from in- and outsiders. “Bijna de helft van de zienswijzen gaat in op vliegbewegingen, openingstijden, routes en vliegreun, waarbij de zorg om (nacht)rust een belangrijk punt is” (Ministerie van infrastructuur en milieu, 2012)”

Flight routes have a major influence on the social impacts per city. Figure 6 and 7 show the predicted flight routes near Enschede, Hengelo and Oldenzaal. The neighborhoods Groot-Driene in Enschede and Zuid-Berghuizen in Oldenzaal were most affected by the former military airport Twente, and will still be most affected if these predicted flight routes become reality. Adecs (2009) states that it will not be possible in its entirety to fly around these buildings, the approach route is also over the buildings on the south-side of Oldenzaal. Figure 6 shows that southern Oldenzaal, especially Zuid-Berghuizen, lies directly under the predicted flight routes. Figure 7 shows that also the southern part of Hengelo, Groot-Driene, lies directly under the flight paths.

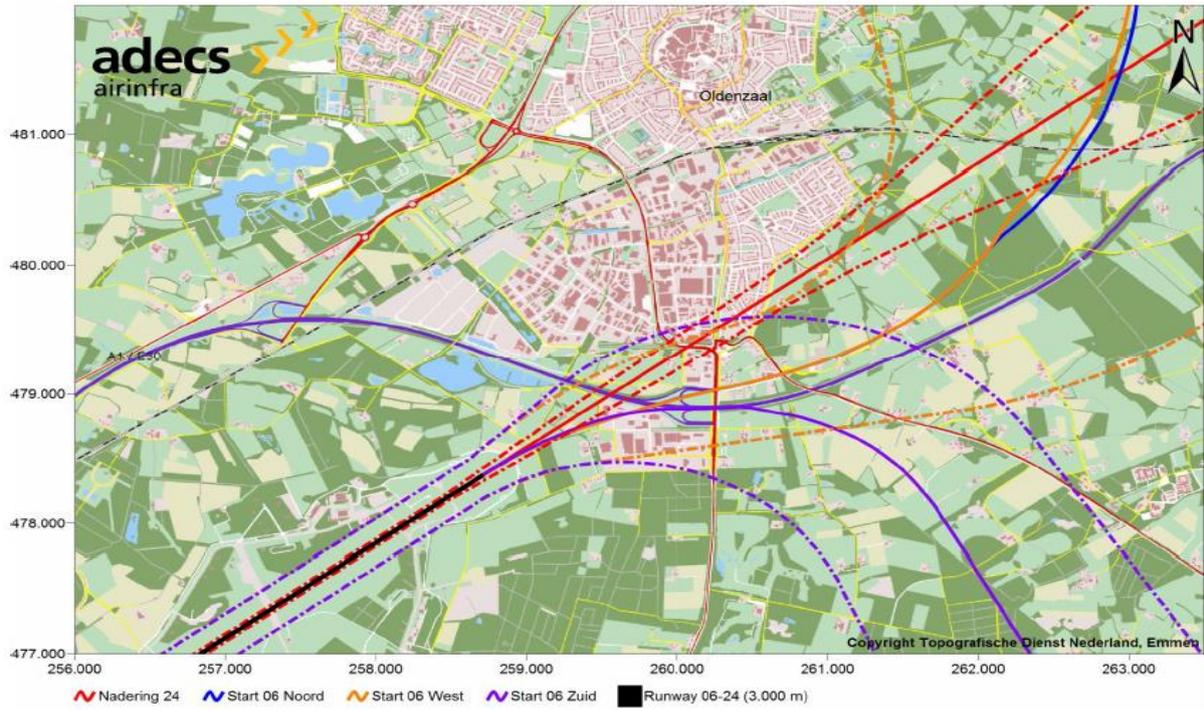


Figure 6: Predicted flight routes Oldenzaal (Source: Onderzoek luchtvaarteffecten rondom luchthaven Twente)

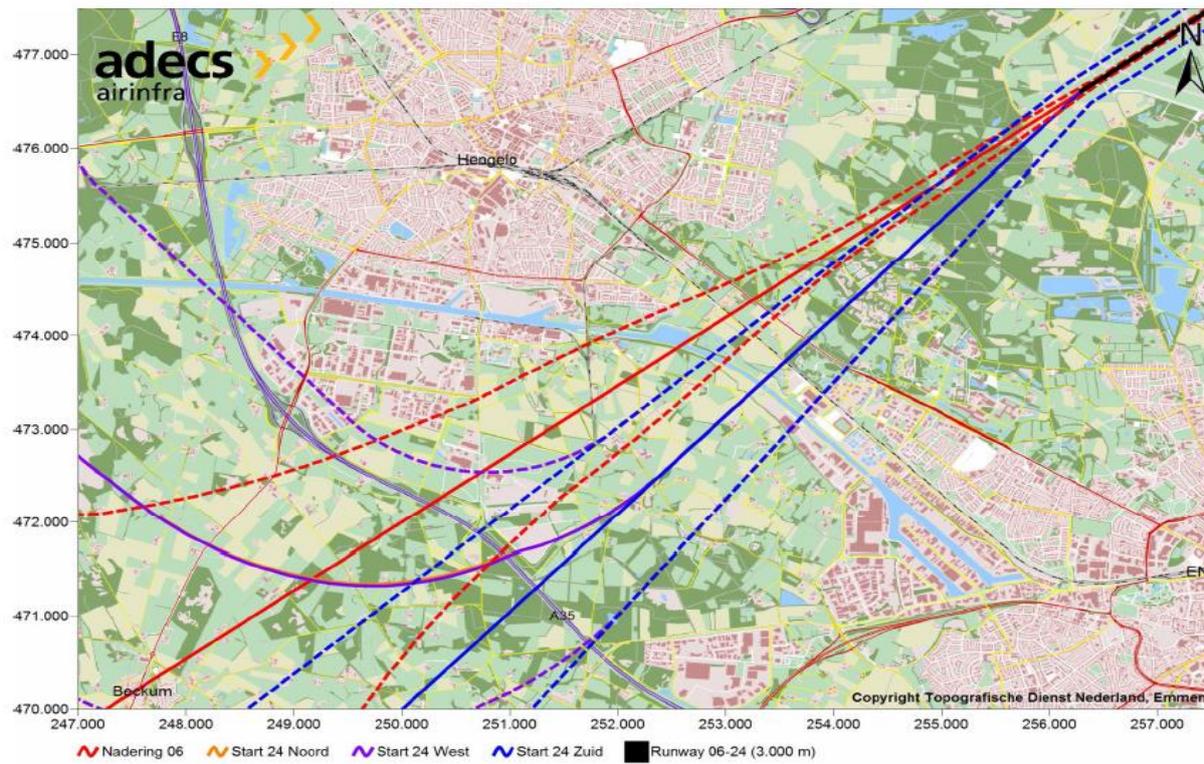


Figure 7: Predicted flight routes Hengelo and Enschede (Source: Onderzoek luchtvaarteffecten rondom luchthaven Twente)

In both neighborhoods soundproof improvements have been made to the houses to reduce the noise. The MER (2012) states that the government has invested abundantly in soundproof homes. Noise caused by low-flying aircrafts can cause different impacts on the inhabitants of these areas. The government (2013) states that aircraft noise can cause insomnia and that can have negative impacts on the learning capabilities of children. Respondent 2 (Interview 2, May 2013) mentioned that his wife had to make arrangements with the former military airport about the flight times, because she wanted to record music. This is a simple example of social impacts that most people don't take in account and know about.

Besides impacts on the social activities, aircraft noise also has a negative impact on the health of the inhabitants. "This ... study found that people exposed to high levels of noise from aircraft were at increased risk of dying from myocardial infarction<sup>1</sup>. The association was strongest in those who had lived at the same highly exposed location for at least 15 years" (Huss et al, 2010). Besides the correlation between aircraft noise and myocardial infarction there also is a correlation between air pollution and myocardial infarction. It has to be stated that the correlation with air pollution is considerably weaker for noise from aircraft than from roads, which should facilitate controlling for air pollution when examining the effects of noise (Huss et al, 2010).

ADT (2013) notes that the flight routes are still under development and that they are designed by experts in this field and are reviewed by the Air Traffic Commission. Thus the impact on the cities is not yet to determine. The presumption is that the effects on the inhabitants of the affected area are considerably smaller because civilian air traffic produces significantly less noise than military air traffic. By analyzing the flight routes Oldenzaal is likely to suffer the most from noise caused by civilian airport Twente, Hengelo the second most and Enschede will suffer the least. This is because Oldenzaal has the largest share of predicted flight routes going over housing, Hengelo the second largest and Enschede the smallest share.

### *Nuisance*

Figure 8 shows a comparison between the two variables 'encountered nuisance from airport Twente' and in which city the respondents live. Figure 8 show that Oldenzaal encountered the most nuisances from airport Twente. In Oldenzaal 38,9% ( $7/18*100$ ) of the respondents encountered nuisance in comparison with 33,3% ( $6/18*100$ ) of the respondents in Enschede and 33,3% ( $5/15*100$ ) of the respondents in Hengelo. In total 31,8% respondents encountered

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<sup>1</sup> Commonly known as heart attack

some sort of nuisance and 68,2% did not encounter any form of nuisance from the former military airport Twente.

The cities are divided into two parts: less than two kilometer from the airport and more than two kilometer from the airport. Figure 5 shows that the respondents living closer than two kilometers, encounter nuisance more often than the respondents who are living further away than two kilometers from airport Twente.

**City \* Nuisance Cross tabulation**

Count		Nuisance		Total
		yes	no	
City	Enschede, <2 km van het vliegveld.	4 (40%)	6 (60%)	10 (100%)
	Enschede, >2 km van het vliegveld	2 (25%)	6 (75%)	8 (100%)
	Oldenzaal, <2km van het vliegveld	6 (85,7%)	1 (14,3%)	7 (100%)
	Oldenzaal, >2km van het vliegveld	1 (9,1%)	10 (90,9%)	11 (100%)
	Hengelo, <2 km van het vliegveld	3 (37,5%)	5 (62,5%)	8 (100%)
	Hengelo, >2 km van het vliegveld	2 (28,6%)	5 (71,4%)	7 (100%)
	Anders, wel in Twente	2 (18,2%)	9 (81,8%)	11 (100%)
	Anders, niet in Twente	1 (25%)	3 (75%)	4 (100%)
Total		21 (31,8%)	45 (68,2%)	66 (100%)

Figure 8

In figure 9 the variable ‘age’ is compared with the variable ‘encountered nuisance; yes or no’. Figure 10 shows the cross tabulation of the variables ‘age’ and ‘proponent, opponent and neutral’. Figure 9 shows that of the age group 50+ 35,5% of these respondents encountered nuisance and 64,5% did not encounter nuisance from the former military airport Twente. If you compare this with figure 10, it shows that of the age group 50+ 29% of the respondents are opponents and 58,1% respondents are proponents. When looking at the age group of the respondents between 41 and 50 years old, 46,2% of the people encountered nuisance and 53,8% did not. When comparing this with the age group of 41-50 years old in figure 10,

46,2% of the respondents are opponents and also 46,2% of the respondents are proponents. There is significant overlap between figure 9 and 10. It shows that the distribution of the variables ‘encountered nuisance’ and ‘proponent, opponent or neutral’, compared with age are interlinked. Thus, respondents which encountered nuisance are more likely to be an opponent than people who did not encounter nuisance.

Figure 9 also shows that the younger age groups (18-24 & 25-30) significantly experienced fewer nuisances than the older age groups (31-40 & 41-50 & 50+). The reason for this is because the younger age group probably can’t remember the days when the military airport produced noise. Most activity on the military airport Twente stopped in 2003 and in 2008 all air traffic stopped. So most of the respondents from the younger age groups never experienced any form of nuisance because they simply can’t remember it or didn’t experience it.

**Age \* Nuisance Cross tabulation**

Count		Nuisance		Total
		yes	no	
Age	18-24	1 (16,7%)	5 (83,3%)	6 (100%)
	25-30	0 (0%)	5 (100%)	5 (100%)
	31-40	3 (27,3%)	8 (72,7%)	11 (100%)
	41-50	6 (46,2%)	7 (53,8%)	13 (100%)
	50+	11 (35,5%)	20 (64,5%)	31 (100%)
Total		21 (31,8%)	45 (68,2%)	66 (100%)

Figure 9

**Age \* Transformation Airport Cross tabulation**

Count		Transformation airport			Total
		opponent	proponent	neutral	
Age	18-24	0 (0%)	3 (50%)	3 (50%)	6 (100%)
	25-30	0 (0%)	4 (80%)	1 (20%)	5 (100%)
	31-40	1 (9,1%)	9 (81,8%)	1 (9,1%)	11 (100%)
	41-50	6 (46,2%)	6 (46,2%)	1 (7,6%)	13 (100%)
	50+	9 (29%)	18 (58,1%)	4 (12,9%)	31 (100%)
Total		16 (24,2%)	40 (60,6%)	10 (15,2%)	66 (100%)

Figure 10

### *Employment*

Another benefit from the civilian airport Twente would be employment. In the cost-benefit analysis (2009) airport Twente should bring approximately 2700 new jobs. In the document ‘Volop ambities voor vliegveld Twente’ (2011) van Hees states that the upcoming civilian airport will bring 2700 new jobs, but this number depends on the creativity and entrepreneurship in this region. “Als bijvoorbeeld een grote internationale onderneming wat ziet in deze ontwikkeling, kan het ook meer worden. Het begint bij de ambitie, maar we willen vooraf ook realistisch blijven” (Van Hees, 2011). And according to Concernstaf (2010) the development of this area with an airport delivers 2600 to 2700 jobs. Contradicting studies conclude different outcomes. MeJedice (2009) states that these results are the predicted gross employment. Net employment is predicted way lower. “Het aantal netto banen is echter slechts 810; elders in Twente gaan 1960 banen verloren. Dit onder meer vanwege de verplaatsing van bedrijven naar het plangebied (met de nieuwe bedrijventerreinen), en ook vanwege de tewerkstelling binnen het plangebied van middelbaar en hoger opgeleiden die anders elders in Twente een baan hadden gehad of gevonden” (MeJudice, 2009).

Again, there are different results from different consultancy agencies. It is more realistic to assume that the civilian airport Twente brings close to 810 jobs because MeJudice included more relevant variables in their study such as the relocation of companies within Twente.

### *Economic impulse*

As figure 4 shows, 24,4% of the respondents that conducted the survey gave economic impulse as a main argument why being proponent. The economic impulse is hard the measure in the region because the economic impulse consists of different variables such as employment, added values, ease and taxes for the municipality and government. The upcoming airport will not only bring jobs, but it will also create housing and there will also be room for recreational activities which also contribute to the economic impulse.

Statistics from the survey show in figure 4 that respondents mentioned the keyword ease 23,2% of the times and thus is the second most given keyword. Civilians seem to attach great value to ease. They won’t have to travel to Schiphol or Airport Weeze/Münster anymore, this will save them time and effort and reduces stress.

An airport does not only have direct social impacts, but also indirect social impacts. For example a positive effect on the factor location. “Het belang van luchthavens is nauwelijks te onderschatten: luchthavens zijn door het aanbieden van efficiënt passagiers- en vrachttransport cruciaal voor ondernemingen om succesvol te kunnen concurreren in sterke competitieve wereldmarkten” (Sleuwaegen et al., 2003). It is likely to assume that an airport attracts business and thus will lead to employment.

## Chapter 4 – Conclusion

The height of the social impacts can't be measured exactly. Still there are undeniable social impacts on the inhabitants of the affected area. In total 31,8% of the respondents encountered some sort of nuisance and 68,2% did not encounter any form of nuisance from the former military airport Twente.

There has been, and still is, communication between the municipalities, inhabitants and protest groups. Protest groups have never been excluded from any form of communication with the municipalities and were always allowed to sit in at board meetings and give their opinion. The biggest problem is that the inhabitants of the affected area have a lack of confidence in the municipalities. Inhabitants don't trust the calculations made by the municipalities and government and think the upcoming civilian airport Twente is a showcase. The protest groups are strict against the new plans of the upcoming civilian airport. As demonstrated in the interviews and their website, they think it is a waste of money and that it will definitely fail. VOLT and SAVT still plea for their 'Care and Cure' alternative.

The social impact on the inhabitants of Enschede, Hengelo and Oldenzaal can be divided into four different parts; nuisance, flight routes, economic impulse and employment. All these subjects are treated in the thesis. In conclusion it can be stated that the negative social impacts cover more inhabitants than the positive social impacts. The most important negative social impact is noise. Besides the nuisance encountered because of noise, noise also increases the risks of dying from myocardial infarction (Huss et al, 2011). By analyzing the flight routes, which have a major influence on the social impacts, it is predicted that Oldenzaal will suffer the most from the negative social impacts. Besides the negative social impacts, there also are positive social impacts. The presence of an airport will make the location more attractive for companies to establish in Twente. Studies have shown that the region Twente will gain 810 net jobs; this can vary depending upon the creativity and entrepreneurship of the area. The municipality of Enschede will have the most profit from the positive social impacts because they are the landowner.

There haven't been many problems regarding the development of civilian airport Twente. The protest groups have different visions than the municipality of Enschede. Both the protest groups and the government have conducted feasibility studies over both plans (one with and

one without an airport). The problem is that these studies contradict each other. This creates a lack of confidence among the civilians towards the government and municipalities.

Overall the planning process was done properly. A suggestion for the future is conducting a social due diligence in advance. “The social due diligence review, developed with appropriate standards of care – or codes of conduct – provides information for top management to reconcile the demands of doing business with the demands of community or other interests in the footprint of the corporate operation” (Sustain-the-globe, 2013). This will most likely reduce the protests and increase the civil acceptance and thus increases the chance of becoming a successful project.

It must be stated that these conclusions are merely prediction.

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## Appendix

### Appendix A:

The conducted survey

#### Survey questions:

I will conduct the survey in Dutch, because this makes it easier for the respondents to answer.

Deze enquête gaat over de sociale impact, van de eventuele transformatie van het voormalige militaire vliegveld naar een burgerluchthaven in Enschede, op de inwoners van Enschede, Oldenzaal en Hengelo. De invulduur van deze enquête zal ongeveer 3 tot 5 minuten zijn. Het invullen is geheel anoniem en wordt niet om persoonlijke gegevens gevraagd.

#### 1. Wat is uw leeftijd?

- 18-24
- 25-30
- 31-40
- 41-50
- 50+

#### 2. Wat is uw geslacht?

- Man
- Vrouw

#### 3. Wat is uw woonplaats?

- Enschede
  - Dicht bij het vliegveld (<2 km)
  - Niet dicht bij het vliegveld (>2 km)
- Oldenzaal
  - Dicht bij het vliegveld (<2 km)
  - Niet dicht bij het vliegveld (>2 km)
- Hengelo
  - Dicht bij het vliegveld (<2 km)
  - Niet dicht bij het vliegveld (>2 km)
- Anders, namelijk...

#### 4. Heeft u wel eens hinder ondervonden van de aanwezigheid van het militaire vliegveld in Enschede?

- Ja
- Nee

Heeft u hier 'JA' in gevuld ga dan verder met vraag 5, indien 'NEE' is ingevuld ga dan verder met vraag 7.

**5. Zo ja, wat voor een soort hinder was dit dan?**

- 0 Geluidsoverlast
- 0 Overlast door druk verkeer
- 0 Andere soort hinder, namelijk...

**6. Hoe erg was deze hinder? Op een schaal van 1 tot 5 (1 nauwelijks tot geen hinder, 5 is ondragelijk).**

- 0 – 1
- 0 – 2
- 0 – 3
- 0 – 4
- 0 – 5

**7. Zou u verhuizen naar aanleiding van de voorspelde geluidsoverlast van een burgerluchthaven?**

- 0 – Ja
- 0 – Nee
- 0 - Misschien

**8. Staat u als voorstander, tegenstander of neutraal tegenover de ombouwing van militaire vliegveld tot een burgerluchthaven?**

- 0 Tegenstander
- 0 Voorstander
- 0 Neutraal

**9. Waarom bent u een voorstander, tegenstander of neutraal?**

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**Eventuele opmerkingen/suggesties?**

Ik dank u zeer voor het invullen van deze enquête,  
Met vriendelijk groet,  
Lars Engelbertink, student te RUG Groningen.

## Appendix B

### In-depths interviews:

1. Interview with the head or someone attached to the 'Stichting Alternatieven Vliegveld Twente':

- Short introduction: who am I and what do I do.
- What is your function and rank in the protest group
- Why do you protest?
- What is (are) the best alternative(s) in your eyes?
- What are your arguments for not transforming the area into a civilian airport?
- What would you do if you could design the area?
- Do you have an personal emotional attachment with the area?
- Has there been or is there any interaction/communication between the inhabitants/protest groups and the government/municipalities?
- And do you think this communication was sufficient? And could it be improved?

Thank you for your time!

2. Interview with someone of the municipality of Enschede who is closely related to the development of airport Twente

- Short introduction: who am I and what do I do.
- What is your function at the municipality and in the project planning?
- What do you personally think is the best for the region? A civilian airport or no civilian airport?
- What are the main advantages and disadvantages?
- Do you think the project is economically feasible?
- How was the communication between the government/municipality and the inhabitants/protest groups? In what form/frequency etc.
- Do you have a personal emotional attachment with the area?
- Naming some studies that concluded different outcomes, ask his opinion about it.

Thank you for your time!