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THE ROLE OF INFORMATION POLICY IN ANNOYANCE GENERATION AND REDUCTION

J. Vogt, M. Kastner

University of Dortmund, Emil-Figge-Str. 50, D-44227, Dortmund, Germany

Tel.: +49-231-7554150 / Fax: +49-231-7555452 / Email: vogt@wap-mail.fb14.uni-dortmund.de

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ABSTRACT

Information policy is an important factor in annoyance generation and reduction. In a pilot study at Duesseldorf International and Dortmund Regional Airport, 180 residents were investigated with respect to annoyance, health, their attitudes towards the airport, and the role of information policy. An open, personal and honest way of information exchange was the most mentioned desire of the residents, it out-ranked even physical abatement procedures. Dortmund University therefore installed a noise telephone for Dortmund Regional Airport. It was used only by 12 residents, but these assessed it very positive. Moreover, a follow-up investigation showed that systolic blood pressure of the participants tended to be reduced relative to the initial measurement and compared to people who did not use the phone.

1 - INTRODUCTION

Already in the first Heathrow study [1] it was concluded that attitudes towards aviation in general and noise in particular significantly affect annoyance. People, who think that too little is done against noise, who are afraid of accidents and fear for their health are more annoyed than people with neutral or positive attitudes under the same noise load ([1], p. 77). Negative emotions like fear and anger are especially induced when people are kept in suspense and future developments are beyond their influence.

Therefore, the information exchange between noise producers and people annoyed plays an important role in noise control policy. A study about neighbourhood noise in The Netherlands for example showed that in 40 % of the cases a dialogue took place, which in 60 % could at least partially resolve the noise problem [2].

However, only few noise producers and authorities consider an open information policy as annoyance abatement procedure. An example is John Wayne Regional Airport in California [3]. The local noise abatement committee maintains a continuous information flow between pilots, airlines, airport and representatives of the residents. In a quarterly report the committee negotiations are published. Moreover, the airport informs the public about noise abatement procedures e. g. operational incentives for low-emission aircraft.

The following study investigated noise annoyance, health effects, attitudes towards the airport, the role of information policy and their mutual influences. From the results of a first data gathering, a personal and online way of information exchange (mobile noise phone) between Dortmund Airport and its residents was derived. In a follow-up study, the noise phone was evaluated.

2 - METHOD

From February to July 1998, 60 residents at Duesseldorf International and 120 at Dortmund Regional Airport were interviewed (90 minutes on average). Most of them also volunteered for three blood pressure measurements and a saliva sample. The latter was used to determine immunoglobuline A (IgA) via radial immune diffusion technique.

The interview combined standardized ratings about e. g. annoyance and activity interference with half-structured questions concerning attitudes towards the noise producer and desired counter-measures. Finally, data about family history of cardiovascular diseases, smoking, physical activity, diet etc. were obtained to control for the physiological measurements.

Leq values were known for the Duesseldorf investigation areas, they were selected as to reflect a wide range of Leq (50 to 70 dB(A)). In Dortmund, measurements were conducted; here the level variation was much smaller and mainly between the no noise control area (39,6 dB(A)) on the one hand and the noise areas on the other (53 to 58 dB(A)).

In the interview, people were also asked whether they would participate in a development process with the airport. 70 to 90 % of the residents wished a personal mode of information exchange (noise telephone, round tables). Among the 120 Dortmund subjects, 85 agreed to use a future noise telephone operated by the University (positives). Only 12 of the 85 people really did (participants). 35 did not see the necessity or the benefit of a noise telephone (negatives). A 24-hour, toll-free mobile phone was installed for Dortmund Airport during March and April 1999. It was operated by final year psychology students, who were well informed about aviation in general and the Dortmund noise situation in particular. They recorded complaints, gave information to the residents and feedback to the airport. In order to evaluate the effects of the noise telephone, 8 of the 12 participants, 9 negatives and 26 positives were investigated a second time from May to June 1999.

3 - RESULTS

It was already reported in [4] that neither between Duesseldorf and Dortmund nor within the investigation areas at one airport significant differences occurred with respect to blood pressure or IgA. However, as could be expected, mean annoyance was significantly higher in Duesseldorf compared to Dortmund (mean \pm standard deviation on a seven point category scale 4.7 ± 1.7 and 3.8 ± 1.6 respectively, $p < .001$).

The noise itself as the most annoying thing was mentioned only by 27 % (Duesseldorf) and 18 % (Dortmund) of the subjects. Especially bothering on the acoustical side were nocturnal and early morning (mentioned by 25 % of subjects) as well as intensive single noise events (10 %). The main other source of annoyance was the information policy of the airport, which was perceived by the residents as "non-transparent" or even "unhonest". At both airports, there was a great desire for an open and honest information policy (Fig. 1). Physical noise abatement procedures like "freeze status quo" and "reduce noise" were only second most mentioned.

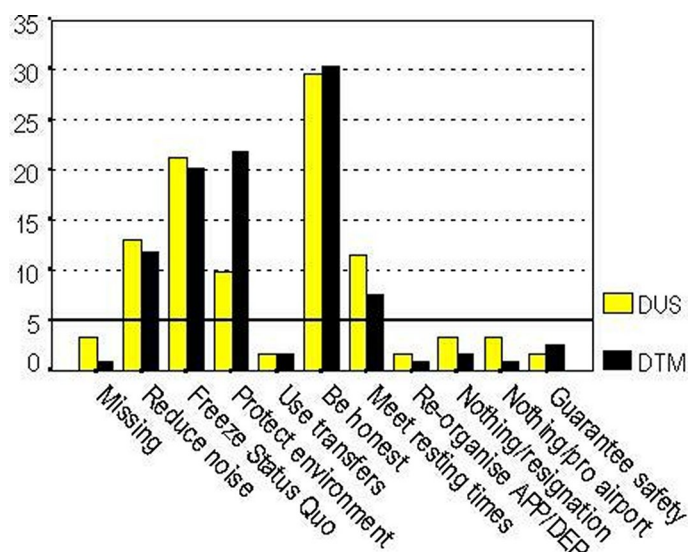


Figure 1: What do you want the airport to do? Percentages of answers in the Dortmund DTM and Duesseldorf DUS sample.

Probably due to the rather low noise levels around Dortmund Airport, the noise telephone was only rarely used. 27 calls from 12 subjects were recorded. However, those who used the phone assessed it very useful (mean \pm standard deviation on a five point category scale 4.6 ± 0.7 , $p < .001$ against centre of scale). In some cases, anger and fear were due to mal-information and could easily be resolved. Precipitation on leafs for example was quite often believed to be generated by regular fuel-dumping of approaching aircraft. The simple information that the most common aircraft in Dortmund, the ATR42 and ATR70, have no fuel-dumping facility, resolved the negative emotions. The information service of the telephone operators was rated good (4.3 ± 0.8 on a five point category scale, $p < .001$).

However, mean annoyance before and after introduction of the noise telephone was not different for

neither of the three groups. But systolic blood pressure tended to be lower after use of the telephone (Fig. 2).

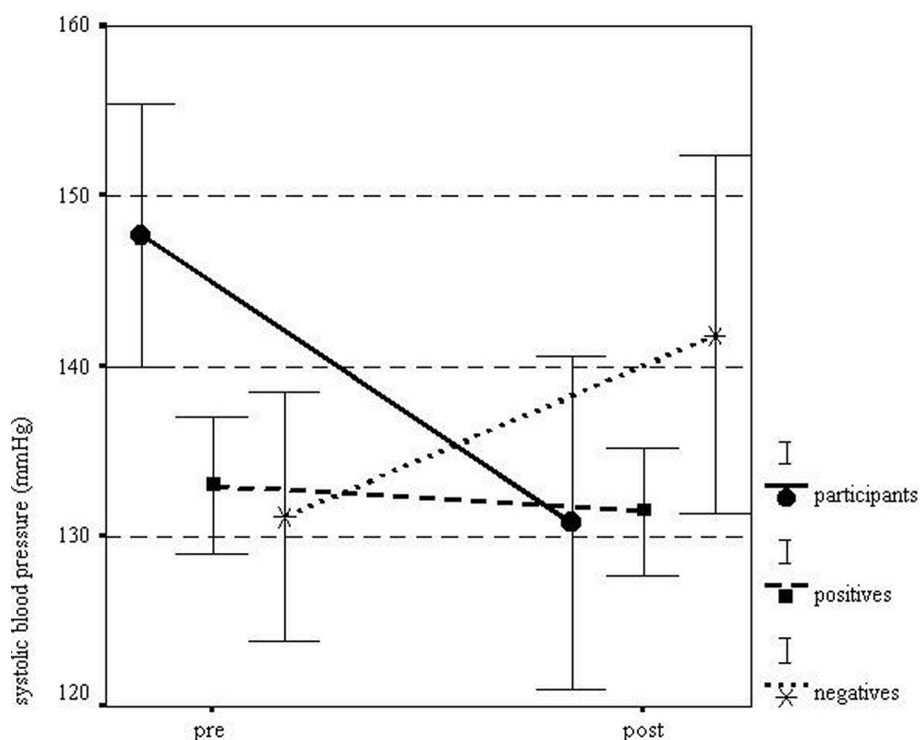


Figure 2: Mean systolic blood pressure of noise telephone participants, positives and negatives in Dortmund before (pre) and after (post) installation.

4 - CONCLUSIONS

Active and passive noise control as well as procedural abatement procedures certainly remain the most important protection measures. However, in order to achieve a good neighbourhood, an open and bilateral information flow should be initiated and maintained. As described above, media can be for example round table discussions, noise abatement committees or online facilities via internet or telephone. Much of the emotional (and potentially health impairing) stress, which can be observed in the interaction of air-service providers and residents – especially when airport extensions are licensed – could probably be prevented by an open and constructive dialogue.

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