NIGHT-TIME REGULATIONS FOR LEISURE TIME NOISE IN PUBLIC PLACES

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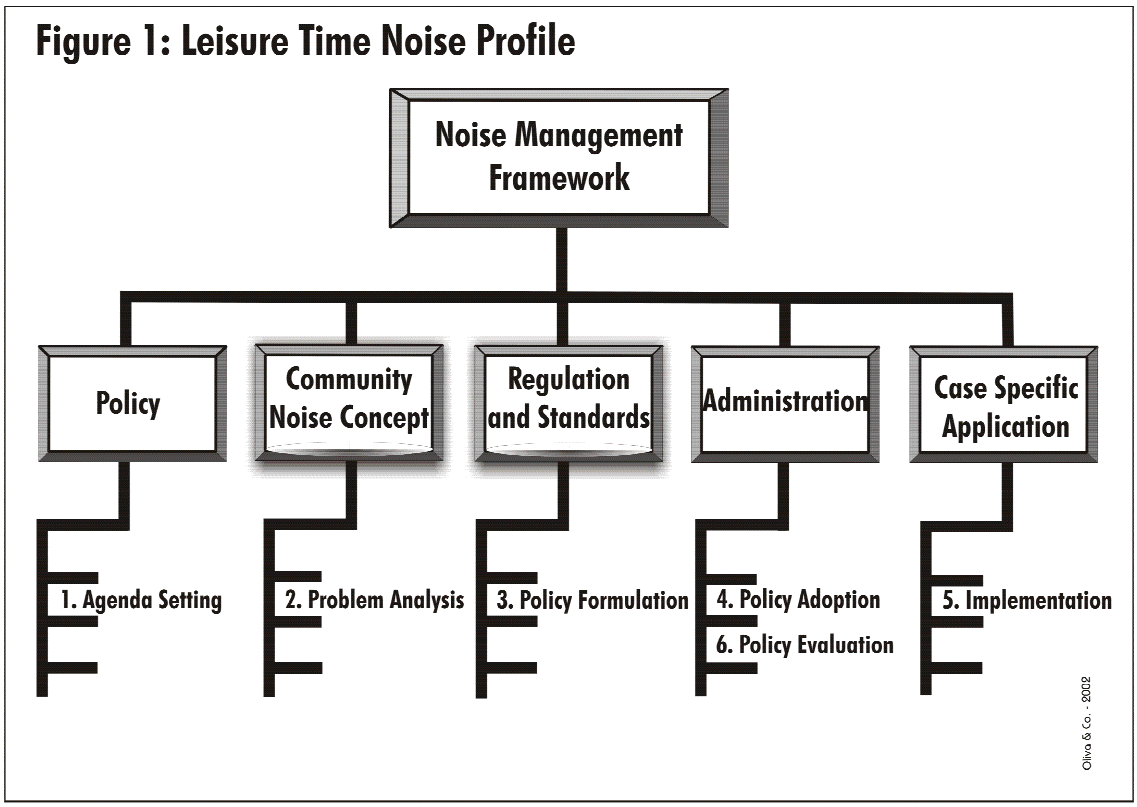
Introduction The discussion of noise regulations and standards, which are generated by leisure time noise in public places – so it seems – are showing within the noise research community nowadays low rates of interests. One would be tempted to say that scientific noise research in this case deals with the same low rates as stock exchange does today. The importance of a sociological perspective for leisure time noise was initially suggested by the World Health Organization WHO [1]. The noise management framework builds the core of the guidelines for community noise and therefore the starting point for the derivation of noise regulations and standards. Hence, the community noise management supports the principle of the United Nation (Agenda 21) and the European Charta (London 1999).

Method The noise management framework implies five different dimensions, which can be assessed by six concepts. These concepts are part of the policy-analysis and belong to the theories of middle range [2]. Figure 1 illustrates the growing important role of the society's network, which is theoretically understood as a behavioural-system, vis-à-vis the states decision production [3].
The *agenda setting* is the 1st concept contending the identification of the leisure time noise problem. In this case residential complaint overwhelmed the responsible authorities. Two public places (Landsgemeindeplatz and Rindermarkt) experienced a further liberal utilization allowing supplementary concerts and new events. Especially during evening and night-time hours the impact of the leisure time noise caused by exhibitions, sport-shows, open-air movies, hip-hop-, techno-, rock-, folk- and jazz concerts, became enormous.



The 2nd concept challenges the *problem analysis*.
In this situation a survey study was proposed and accepted to be the adequate instrument, establishing a data matrix to achieve description and explanation of the leisure time noise problem. A further issue was to realize a mental picture of the local soundscapes around these two different places by questionnaire technique [4]. Local soundscapes are noise sources, which are representing objects and processes based on the direct association with the corresponding noise signals. An acoustical parameterization on these places had been carried out, once the survey and statistical analysis was terminated.

The 3rd concept touches the *policy formulation*.
In this study it was thought of a noise surveillance and control system. The survey and acoustic data did inform on in as much the leisure time noise impact must be considered reasonable for residents, e.g. being considerable harmed in well-being. A prior permission is required for all events on these two public places, so the demand of a noise limit or an acoustical control value became stronger.

The 4th concept is the *policy adoption*.
During this study-phase a working group, joining representatives from the administration, politics, show managers, cultural representatives and scientists, became mandatory. The central part was the categorization of the various concerts and events to develop a sound related point system. Hence, a seasonal leisure time noise contingent was defined, which did facilitate the formulation of the community noise regulation by assessing this specific situation.

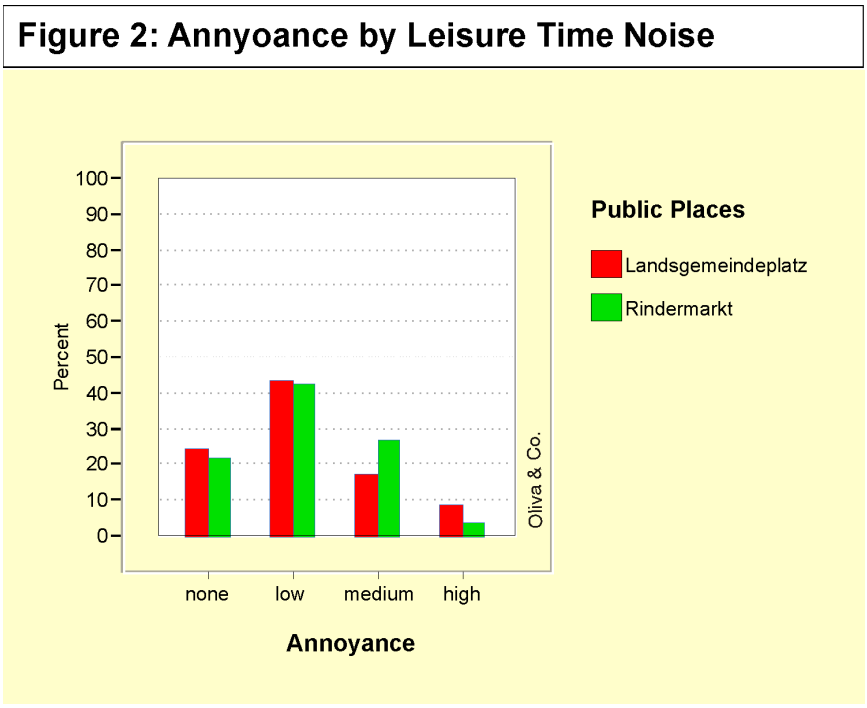
The 5th concept is the *implementation phase*.
In this investigation, the security department did receive basic instructions in leisure time noise management. The reciprocal exchange of actual made experience secures the management of

the community noise problems. In this sense, the mutual contact helps to establish an early warning system.

The 6th concept is the *policy evaluation*.
In this specific case, the acoustical control measurements and the seasonal leisure time noise contingent were validated. The two year evaluation phase and the empirical survey results lead to the introduction of the noise regulation in this Swiss town.

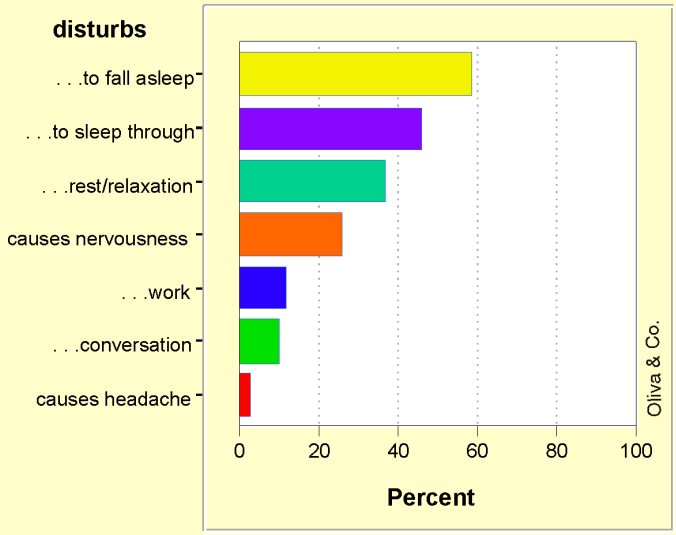
Results Applying the randomized technique, the project manager sampled the data, which were supplied by the community administration office. Sampling was random and proportional to size of the living area. The respondents rate was 54% (N=386) and an equal distribution of the noise sensitivity ($F=1.1621$, $p<0.2818$) is observed. 9% respectively 4% of the respondents reported being highly annoyed by leisure time noise. Figure 2 shows the annoyance in function of each public place: the Landsgemeindeplatz and the Rindermarkt.

Figure 2: Annyoance by Leisure Time Noise



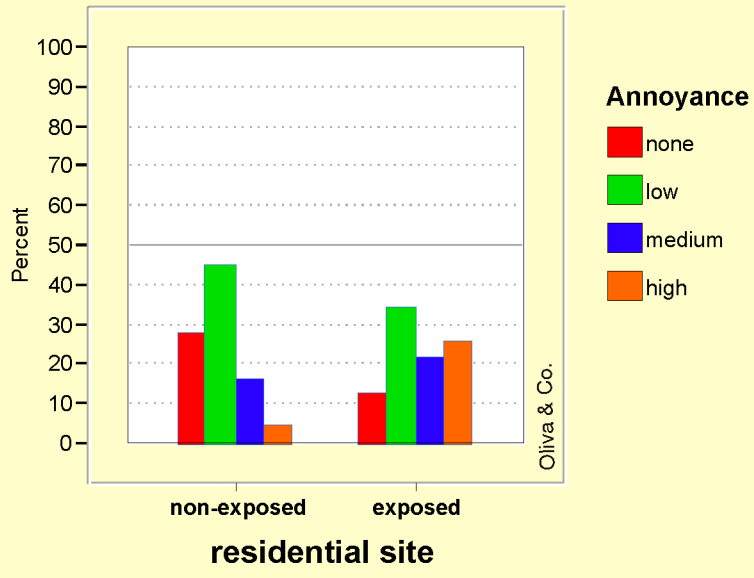
As hypothesized, the stated high annoyance (applying the eleven-point scale) is low, yet the leisure time noise related consequences are persuasive. Figure 3 shows consequences of leisure time noise. 59% of the persons are disturbed to fall asleep, 46% are disturbed to sleep through, and 37% are disturbed to take a rest and relaxation. Nervousness is caused by 26% of the persons, and 10% report conversational disturbances.

Figure 3: Consequences of Leisure Time Noise



Considering now only one of the residential site at the here discussed public places, then the exposed residential site shows five times of the high annoyance than the non-exposed residential site. This is shown in Figure 4. The propagation of the sound by leisure time events in this case, impacts a small public location which takes a dense population in account. Looking even further at one of these public places, then it is particularly the carnival, the lake-night festival and the rock and jazz concerts, which are causing a high disturbance in the population.

Figure 4: Annoyance at Landsgemeindeplatz



What are the dimensions of these additional local soundscapes, which are actually the source for the annoyance and disturbance? In descending order, these soundscapes are characterized by ‘shouting to each other’, ‘electronic music’, ‘slamming car doors’, ‘departing cars’, ‘laughing and talking’, ‘low frequency noise’, ‘busy taverns’, ‘cheerful atmosphere’, ‘garden-restaurants’, ‘festival operations’, ‘applauds’, and ‘tidying up the place’. The correlations between the additional local soundscapes and the residential site (Landsgemeindeplatz) are significant for ‘festival operations’ (Carmer’s $V=0.30$, $p<.01$) and ‘garden-restaurants’ (Cramer’s $V=0.21$, $p<.05$).

Discussion The results of this investigation show that ‘electronic music’ and ‘low frequency noise’ are the main reasons for the annoyance and disturbance of leisure time noise in public places. Based on the experience and with the introduction of the community noise regulation, the communal administration is now in the situation to manage and control the noises caused by leisure time events. A stronger regulation for permissions of leisure time events is not wished by the population, so they expect that leisure time events are lasting until midnight. Traditional leisure time events have a pro until two o’clock in the morning. The recording and description of the local soundscapes is subsequently understood as a sociological specification of the general community noise concept. Finally these noise regulations support the creation of a safer and nicer acoustic environment around these public places.

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Keywords: Leisure Time Noise, Noise Regulations, Soundscapes, Community Noise Concept

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