ARGUMENTA
OECONOMICA

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ENVIRONMENTAL CONDITIONS OF JELENIA GÓRA REGION AND SELECTED KINDS OF OFFENCES[1]

1. INTRODUCTION

The geographical position of the Jelenia Góra region in the western border area, its beautiful climatic conditions, convenient transport links and the state of its development make it a tourist attraction of more than local importance. This state of affairs has certain consequences. Mass tourism, including visitors from abroad, activates the socio-economic development of a region, but has an adverse effect on the general safety and public order of such an area.

It is widely accepted that among the influx of tourists into the area there are also some potential offenders from different social groups. However difficult it is to pinpoint the exact number of offences connected with tourism, the fundamental aspects of its influence on public order and safety can be accepted as:

− the relation between tourism and a growing crime rate in certain areas and during the tourist season

− breaches of order and safety regulations in road and rail transport, also in the water reservoirs and their vicinity

− influence of tourism on the increase of public order offences

− influence of tourism on sanitary conditions, cleanliness, order and fire safety in tourist regions.

Analysis carried out on public order offences between 1987–1990 in the Kraków, Warszawa, Szczecin, Gdańsk, Koszalin, Olsztyn and Jelenia Góra

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provinces (see: 'Statistical...' 1988 and 1991) shows the relation between the rise in certain catagories of offences (theft for example) and the increase of tourism, especially during the summer months. It would be erroneous, however, to look for the reasons behind the growing crime rate only in the increase of tourism.

The background of such a rise is far more complex; it seems that in the case of certain areas, environmental conditions play a major part – the Jelenia Góra region being one of those affected. The climate of the Jelenia Góra region is quite complex. The short term existence of particular types of air circulation lies behind the changeability of the weather in the Karkonosze mountains.

Despite not being particularly high (upto 1600 m above sea level), there are frequent occurences of weather patterns more typical to high mountain regions, among which the most typical is the foehn phenomenon. They can have different characteristics (see: Kwiatkowski, Holdys 1985) and are connected with the occurence of warm, dry, gusty winds blowing in certain barometric conditions from the mountains into the lowlands.

Such occurences are of great meteotropic activity i. e. they have a strong influence on the psychosomatic states, causing headaches and dizziness, accelerated heartbeat, anxiety, depression, short temper, excitement and aggression. The influence of the foehn phenomena occuring in Jelenia Góra on some types of social pathology poses an interesting question.

2. RESEARCH METHOD

Among the pathological cases recorded between 1986–1990 in the Jelenia Góra region (that is in the Jelenia Góra police district) there have been singled out two categories: suicides and road accidents – because it seems most likely that these are connected with the list of symptoms related to foehn.

Information about their occurence was consulted using monthly biometeorogrammes to establish the barometric situation on the days when the particular offences took place. Such information has been gathered in statistical tables. Next, using the test of independence χ^2, the null hypotheses have been verified, to establish (see: Steczkowski, Zeliaś 1981) the existence of a correllation between these categories of cases and certain barometric conditions.

3. GALES AND CASES OF SUICIDES AND ROAD ACCIDENTS

'Halny' (foehn) wind, with its negative influence on the psychosomatic states, can play a major role in committing suicides and causing road accidents.

Tables 1 and 2 present the information laid out as the number of days (1986––1990) in which there were registered the above mentioned sociopathological cases.

The statistical material in Table 1 was used to verify the theory about the interdependence of foehn winds and suicides. The verification procedure is based on the independence test χ^2, and the level of significance 0.05 leads to the following results:

$$\chi^2_{empirical} = 74.15$$

$$\chi^2_{theoretical} \text{ (for } k = 1) = 3.841$$

Bearing to mind the noticeably higher theoretical value to the empirical statistics χ^2 it can be said that there is a relation between the occurence of 'halny' winds and suicides. Based on the information in Table 2, we verified the theory of existing dependence between 'halny' winds and reported road accidents. The identical procedure ($\chi^2_{empirical} = 75.18$, $\chi^2_{theoretical} = 3.841$) so confirming the existence of assumed dependence. It bears a direct relation to such side-effects of foehn winds as anxiety, loss of temper and depression.

4. THE BAROMETRIC SITUATION AND CASES OF SUICIDES AND ROAD ACCIDENTS

The consequence of the foehn phenomena existing in the Jelenia Góra region is not only 'halny' wind. This is often accompanied by an increase of temperature together with a loss of air humidity and a large drop and strong fluctuation in atmospheric pressure causing the movement of barometric fronts.

We have, therefore, taken under account the influence exerted by these fronts (as complex meteorological phenomena) expressed in the number of days in which they have an effect on the examined catagories of offences. Corresponding information can be found in Tables 3 and 4. The verification of data in Table 3 led to the following results (assuming the level of significance 0.05).

$$\chi^2_{empirical} = 64.96$$

$$\chi^2_{theoretical} \text{ (for } k = 4) = 9.488$$

which means that there is a clear influence of barometric changes on the occurence of suicides.

The data in Table 4 helped in verifying the theory of dependence between certain barometric situations and the number of road accidents. Results obtained:

$$\chi^2_{empirical} = 150.57$$

$$\chi^2_{theoretical} \text{ (for } k = 8) = 15.507$$

thus confirming the hypothesis. Additional analysis of biometeorogrammes and the fact of existence of such offences deny any links between the influence of particular months or days over committing these offences.

The research deliberately leaves out such catagories as murder and theft. In the former, a very low number of crimes would not allow for the sample to be representative and would lead to errors. In the latter – theft – there are other contributing factors outside atmospheric conditions.

The present socio-economic situation of the country has to be a contributing factor influencing law and order by adding such major elements as the growth of unemployment and the lowering of society's standard of living.

Table 1
Occurrence of 'halny' and suicide risk in Jelenia Góra region, 1986–1990

Suicides	'Halny' wind	
	present	not present
occurred	116	56
not occurred	569	1085

Source: own research based on data of Jelenia Góra District Police (KRP) and Institute of Meteorology, Station in Jelenia Góra.

Table 2
Occurrence of 'halny' and risk of road accidents in Jelenia Góra region, 1986–1990

Road accidents	'Halny' wind	
	present	not present
occurred	352	354
not occurred	333	784

Source: as in Table 1.

Table 3
Occurrence of barometric fronts and suicides in Jelenia Góra region, 1986–1990

Suicides	Barometric situation				
	front		system of fronts	occlusion	wedge of high pressure, high pressure
	cold	warm			
occurred	104	28	13	–	27
not occurred	574	259	170	138	513

Source: as above.

Table 4
Occurrence of barometric fronts and number of road accidents
in Jelenia Góra region, 1986–1990

Road accidents		Barometric situation				
		front		system of fronts	occlusion	wedge of high pressure, high pressure
		cold	warm			
Number of accidents that day	0	431	162	109	64	333
	1–2	217	105	62	63	174
	3 and more	30	20	12	10	13

Source: as above.

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