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Risk propensity, absent-mindedness and depression versus involvement in accidents

Abstract: Relations between individual traits and frequency of causing accidents have been analyzed. On the basis of results from 465 women and 277 men it has been found that the causing of accidents correlates with risk propensity and with risk taking influenced by self-destructive motivation. Persons often causing accidents are also absent minded to a greater degree, and experience depressive moods more frequently than persons rarely involved in accidents.

Keywords: Biophillic and self-destructive motivation, Individual accident index, Risk taking, Absent-mindedness, Depression

Research problem

Causing accidents is presented as the result of taking a risk. Taking risks entails voluntary exposure to danger, undertaken with an intention to preserve life and health, with the purpose of achieving a beneficial outcome. Accidents occur due to unintentional mistakes, as well as conscious violations of safety standards (Reason, 1997). The probability of making a mistake remains in connection with the level of difficulty of activities undertaken, the level of competencies and the dimensions of performers' individual characteristics. Violation of the principles or norms constitutes the conscious choice of dangerous behaviours, forbidden or different from the demanded ones, undertaken in the connection to personality traits (Clarke, Robertson, 2005), attitudes (Pidgeon, 1991; Rohrmann, 2005) as well as mood and states which affect human fallibility (Garrity, Demick, 2001; Wong, Huang, 2009). The collected empirical evidence confirms that there is a connection between the tendency to take risks and to show dangerous behaviours, and the causing of accidents. Individuals who have a tendency to take risks prefer activities which require high skills and competencies (Zuckerman, 1983), at the same time they avoid following the security systems recommended (Tyszka, 1992; Chmiel, 2003) and in this

way manifest their courage (Leary, 1999). Much evidence has been collected indicating that inclination to risk is not the only source of motivation for undertaking dangerous activities (Connor-Smith, Flachsbar, 2007). More accidents are caused by men than women. However, it is not known whether they are much more inclined to take risks, or because they use risk taking differently (Studenski, 2000; Bassett, 2004; Wilke et. al. 2006). Accidents frequently occur as a result of decreased ability to focus attention (Cheyne et. al., 2006; Ferreira et. al., 2009). In the analysis performed by the Central Institute for Labour Protection (CIOP) (Pawłowska et.al., 2010) it was estimated that more than 40%, of the 130 thousand work-related accidents occurred in connection with the lack of attention. Moreover, every fourth accident originated from improper behaviour undertaken due to insufficient attention span required for a given task. Other research demonstrates that the frequency of causing accidents coincides with the sense of hostility towards others, as well as with self-destructive motivation (Suchańska, 1998) generated in human consciousness in the form of mechanical thoughts (Franken, 2005). Traces of self-destructive risk-takers were encountered in the research concerning reasons of driving offences. Self-destructive car drivers have caused twice as many car accidents as other drivers, before attempting suicide (Crancer, Quiring,

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1970). Some policemen, who are too daring in actions with the use of guns, in fact exposed themselves to gunfire in search of punishment, feeling guilty and hating themselves (McMains, Mulins, 2001).

The presented data indicate that accident rate is a linear or exponential function of the inclination for risk-taking. Still, a relation between these two variables may be modified under the impact of other variables. **Therefore, on account of it, in the research reported here information was searched for, which would describe the relation between the tendency to take risks and accident rate, perceived as a subjective variable considering the role of mediating variables including gender, absent-mindedness, depression, and motives.**

Assumptions and hypotheses

It has been assumed that the accident rate of a group remains in connection with the inclination of its members to take risks. People usually undertake risks having success in mind, hoping not to suffer a loss. However, risk increases the probability of making mistakes, which lead to accidents. The relation of the inclination to risk taking with accident rate is modified by the states of absent-mindedness and depression. As a result of depression, initially there is a tendency stimulating to take risk with supposition that an accident may happen. Subsequently, taking a risk becomes a self-destructive intention under the influence of increasing symptoms of depression (Studenski, 2007).

It is accepted that motivation for taking risks incorporates a two-factor structure, defining a force of the motive and its direction. Four biophyllic motives have been distinguished, namely hedonistic, prestigious, economic and altruistic ones, as well as two self-destructive ones, encour-

aging to escape from life and to suffer punishment. They are presented in Figure number 1 below.

It is expected that the realization of the planned research project will show that people who often undertake risks more often experience being cut or burnt in comparison with individuals with aversive attitude towards risk taking. What is more, accidents are more often caused by the dare-devils, especially depressive and careless individuals, than by the careful, attentive and non-depressive persons. It has also been expected, that the proper predictors of accident-rate are individual traits, while the prediction of inclination for taking risks, depression and absent-mindedness is supported by conspicuous motives. The assumptions and expectations presented here are expressed in the following hypotheses.

H₁ Accident rate is in a relation with the inclination for risk taking.

H₂ Accident rate of women and men does not differ if the members of the same groups are similar in terms of inclinations to risk taking and function under similar threats.

H₃ Motivation to risk taking is higher in groups with high accident rate in a comparison with groups with lower accident rate.

H₄ Increased motivation power observed in conditions of increased accident rate, and is mainly due to self-destructive motives.

H₅ Accident rate of the group is determined by the trait profile of its members. It was assumed that among various combinations of high and low measurements of the three analyzed traits the lowest accident rate should occur in groups that do not include any dare-devils, extremely absent-minded and depressive persons. Thus the highest accident rate should occur in groups including dare-devils and people with clear symptoms of depression and absent-mindedness and with self-destructive motives revealed.

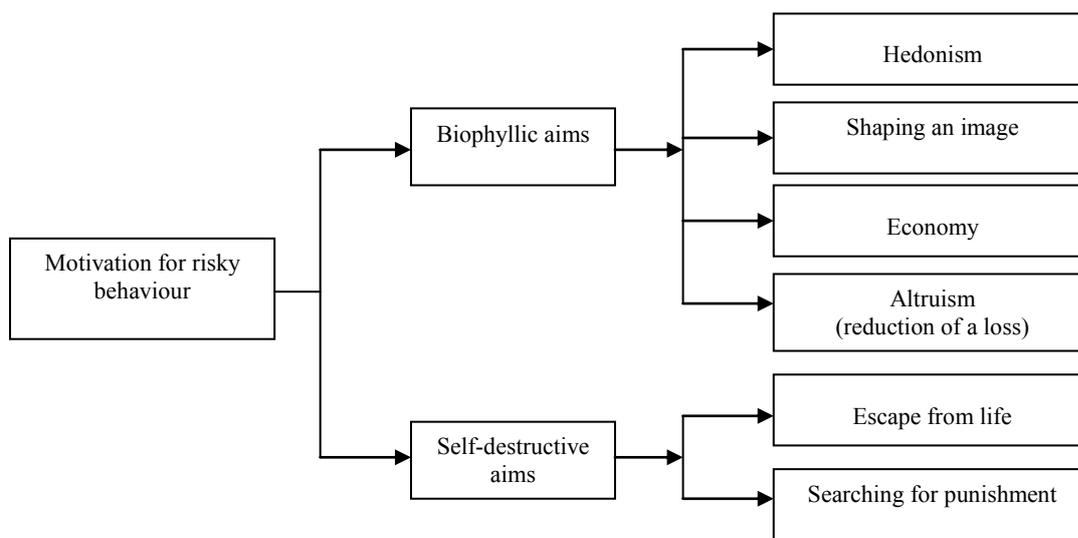


Fig. 1. A model of motivation for risky behaviour

Research procedures

Respondents in the research

There were about 900 participants in the research. As many as 858 sets of properly done surveys were accepted for the analysis. The research group included 465 women with the average age of 19.8 and 277 men with the average age of 24.6 years. The research was performed between the year 2009 and 2011. The topics of the research were divided into specific problems for particular groups, differing in the number of participants. The research participants included full-time and extramural students, as well as students of the post-graduate courses, professional, and qualifying courses.

Instruments

Dependent variables included the value of accident index and three types of accident severity indices. Independent variables included propensity to take risks, absent-mindedness and depression. Instruments constructed by the Author of the research were used in the study. Three independent variables were measured: – inclination to risk, absent-mindedness, depression, as well as two dependent variables: motivation accompanying risky behaviours, and participation in accidents. **Risk-propensity questionnaire** was used in measuring the risky behaviours, which included 16 statements (“It happens that I select a shortcut being a dangerous road”. I risk more than others”) with scoring the answers from 0 (“very rarely or never”) to 4 points (“very often”). The reliability of the questionnaire has been estimated by means of alfa Cronbach, it equalled 0.93.

Absent-mindedness was measured with 15-item Self-control scale (“I have got problems with punctuality. I sometimes drop some things. It happens that I throw some things needed away and keep the undesirable ones”). Answers have been scored using a 5-point scale ranging from 0 (“very rarely or never”) to 4 points (“very often”). The reliability of the scale equals 0.86.

A questionnaire of Self-evaluation was used for measuring **depression** and included 28, such as: (“I think that I have got a failed life. I feel that my life lacks sense. I do not feel like living at times. I have got a feeling that I can not overcome the piling up difficulties”). To measure the answers a 5 point-scale was used with the border values of 4 points for “very often” answers and 0 point for “very rarely or never” answer. The α Cronbach indicator, describing the reliability of the self-evaluation questionnaire reached the value of 0.94.

The motivation for taking a risks was measured with the help of **Motives for Risky Behaviours Questionnaire**. The questionnaire includes 42 statements diagnosing six motives distinguished in taking a risk. There are six statements used in measuring the motives indicated and presented in the frame below. The answer presenting the degree of agreement was recorded with the use of a 5 point-scale where YES answer scores 4 points and NO scores 0 points.

Examples of items concerning motives for Risky Behaviours Questionnaire.

1. I undertake a risk to feel a thrill of excitement.....Y RY ? RN N
2. I risk to show my value to others Y RY ? RN N
3. I risk when I can do something fasterY RY ? RN N
4. I take a risky step when it can decrease the oncoming lossY RY ? RN N
5. I do risky things when I feel emptiness and depressionY RY ? RN N
6. I perceive taking a risk as a penance for my bad deedsY RY ? RN N

The value of the alfa Cronbach reliability indicator for the whole scale equals to 0.92. The highest reliability of 0.93 was observed in case of hedonism sub-scale while the lowest one was recorded for altruism subscale. The following reliability level of other scales has been recorded: 0.88 for searching for punishment, 0,87 for the escape from life and 0.87 for willingness to maximize the benefits and 0.83 for increase of prestige.

Information about accidents was collected with the help of questions attached to other questionnaires. Questions were asked about number and severity of accidents experienced in a two-year period preceding data collection. Light, medium-hard and heavy accidents were taken into account.

Light accidents, indicated with NMed symbol (no medical assistance required), are defined as accidents causing pain or sense of discomfort lasting for more than 24 hours but not requiring medical consultation.

Medium-severity accidents included events requiring medical consultation or visit in outpatient clinic. Those accidents were indicated with Med symbol (Medical assistance required).

Heavy accidents, marked with Hos symbol (hospitalization) required admission to hospital.

An aggregated **individual accident index** has been used, as an indicator of accident rate in the analysis of the accidents. It describes the participation of each respondent in accidents. It has been calculated in the following manner: the number of light accidents plus a double number of the medium-severity accidents plus the number of heavy accidents multiplied by 5. The following formula has been used:

$$\text{Individual accident index} = \text{NMed} + (\text{Med} * 2) + (\text{Hos} * 5).$$

The value of individual accident index has been treated as a subjective dimension, expressing individual differences in the frequency of causing accidents.

Results

Risk propensity versus male and female accident involvement

If risk propensity is positively correlated with the frequency of causing accident, accident rates in groups with similar risk propensity should not be different. Men and women with similar risk propensity probably cause

the same number of accidents. Hypothesis H1 assumes, that in agreement with published research results, risk propensity is related to the frequency of causing accidents. In the research reported here it has been found that men participated in more accidents, in comparison with women. The total number of 277 male research participants were involved in 1316 accidents of various severity throughout two-year period. There were 475 accidents per 100 men. In the group of 465 women 1807 accidents happened, which means 389 per 100 female participants. Light accidents were the most frequent ones (66.5% of all accidents reported by women and 67.6% of total number of accidents declared by men). The proportion of accidents which demanded medical consultation was assessed to be 29.4% in women (114.2 accidents per 100 women) and 26.4% for men (125.3 accidents per 100 male participants). The men who took part in the research underwent post – accident hospital treatment more frequently than women. The value of the frequency index for accidents demanding hospitalization was equal to 28.5 per 100 men, whereas the same index for women amounted to almost half that figure and equaled to 16.1, which is shown in Table 1.

Also the frequency of accidents presented in the form of an individual index which aggregates accidents of various severity, is significantly higher in men than in women. Among the three kinds of accident severity analysed, men reported having light injuries and suffering from accidents demanding hospitalization significantly more frequently than women. The frequency of accidents demanding medical assistance was similar in both groups, whereas accident frequency presented by means of the aggregated individual index was significantly higher in the male group.

The presented way of analysing differences in accident causation is a comparison of “risk – takers” with persons who “play safe”. The difference between men and women

in terms of accident frequency does not result from specific male of female nature, but is a result of higher frequency of male exposure to dangers and risk. Therefore, in agreement with the contents of hypothesis H2, it was expected that in the groups of men and women with similar level of risk propensity, there would be no difference in accident frequency. The distribution of risk propensity measurements ($M = 21.06$, $SD = 14.16$ for women; $M = 27.07$, $SD = 13.45$ for men) was divided into six parts. The following levels of risk propensity were distinguished: very low (0-9), low (10-16), lower average (17-25), higher average (26-35), high (36-45) and very high (46 and more). Arithmetic means of the accident frequency index for risk propensity ranges are presented in Table 2.

The name of the group is shown in the first column, whereas the arithmetic means of participants’ risk propensity measurements are presented, in the third one. Men and women included in the same group did not differ either in terms of risk propensity level, or in terms of individual accident index. Women from the first group were characterized by the lowest risk propensity, they obtained arithmetic mean of risk propensity measurements equal to 4.83, whereas in men from the same group - a risk propensity arithmetic mean equal to 5.21 was registered. These arithmetic means are not significantly different. Similarly, male and female risk propensity arithmetic means from the remaining groups were compared. Groups of males and females which did not differ in terms of risk propensity also did not differ in terms of accident involvement. The data from Table 2 confirm hypothesis H2 and suggest that the relationship between risk propensity and accident causation is different for various risk propensity levels. Men and women who are aversive to risk-taking cause significantly less accidents than women and men who take substantial risk.

Table 1. Comparison of accident frequency in case of men and women

Accident severity	Gender	Number of participants	Number of accidents arithmetic mean	Standard deviation	t-test	t-test significance level
NMed No medical assistance required	women	465	2.58	2.10	3.874	0.0001
	men	277	3.21	2.17		
Med. Medical assistance required	women	465	1.14	1.79	0.805	0.42; ns
	men	277	1.25	1.85		
Hos Hospitalization	women	465	0.16	0.55	2.541	0.011
	men	277	0.28	0.77		
Individual accident index	women	465	5.67	6.29	2.928	0.004
	men	277	7.14	7.14		

Table 2. Individual accident index in groups varied in terms of risk propensity

Risk propensity group	Gender	Risk propensity arithmetic mean	Number of persons in a group	Accident frequency arithmetic mean (index)	Standard deviation	t-test	t-test significance level
Very low	women	4.83	81	4.22	5.03	0.609	0.544 (ns)
	men	5.21	31	3.61	3.87		
Low	women	13.02	50	4.96	7.44	0.074	0.941
	men	13.61	23	5.09	4.98		
Low average	women	20.63	63	5.13	4.70	1.193	0.235
	men	21.15	50	6.28	5.57		
High average	women	29.79	54	6.09	5.52	1.382	0.170 (ns)
	men	30.68	52	8.13	9.28		
High	women	40.03	23	5.87	5.66	1.735	0.088 (ns)
	men	39.98	36	9.39	8.59		
Very high	women	50.28	17	7.65	8.17	1.332	0.192 (ns)
	men	50.80	18	11.33	8.20		

Table 3. Motivation to take risks and trait dimensions in persons differing as to accident frequency

Trait		Individual accident index						t- test	t-test significance level
		very low			very high				
		N	M	sd	N	M	sd		
Risk-taking motive	hedonistic (M1)	40	8.20	6.96	25	7.50	5.52	0.45	0.65; ns
	prestigious (M2)	40	10.30	7.70	25	9.90	6.22	0.22	0.82; ns
	economic (M3)	40	11.60	7.18	25	13.30	6.95	0.89	0.38; ns
	altruistic (M4)	40	20.60	4.34	25	21.60	4.08	0.96	0.34; ns
	escape from life (M5)	40	4.00	3.55	25	6.80	6.24	2.38	0.020
	punishment seeking (M6)	40	4.70	3.77	25	8.40	6.69	2.89	0.005
Risk propensity		81	16.04	11.96	88	27.84	14.14	5.83	0.005
Absent-mindedness		34	14.09	8.84	64	22.90	12.04	3.76	0.003
Depression		60	29.53	17.73	110	41.16	20.76	3.67	0.0003

Symbols in table mean: N – number of participants, M – arithmetic mean; sd – standard deviation;

Strength and kind of motives versus accident causation

Hypothesis H3 is focused on motivation for dangerous behaviours. Effects of individual traits and motives on accident rate level have been studied. In Table 3 the results of measurements of traits and motives are presented for two groups of persons differing in the frequency of accidents caused.

The group of persons rarely causing accidents obtained a significantly lower arithmetic mean of risk propensity, absent-mindedness and depression measurements, in comparison to the arithmetic mean of persons with high accident index. While comparing the strength of motivation for risk-taking between persons with low and high accident index it has been found that differences exist only in the domain of self-destructive motives. The presented comparison suggests that accident occurrence may be a result of making a mistake during risk-taking combined with safety - preserving attitude. Other reasons may be risk taking without concentration on threats or with consent for an accident to happen. Figure 2 presents the strength of three out of six analysed risk – taking motives experienced by persons differing in accident causation frequency.

The strength of self-destructive motivation (M6) is correlated with accident frequency. This motive is more pronounced in persons who frequently cause accidents and less visible in persons behaving carefully. The relationship between the strength of the remaining motives and accident rate deviates from standards of linearity. Both prestigious and economic motivation differ but slightly in case of

persons causing accidents very frequently and persons causing accidents very rarely.

In the light of the research obtained, hypothesis H3 occurred not to be true. It was positively verified only by the picture of changes which take place in self-destructive motivation. The increase of risk-taking motivation has been found in the analysis of self-destructive motives developed by persons who often cause accidents.

Stimulators of dangerous behaviour

Mental traits constitute a set of dispositions influencing choices made by people, their behaviour, and results of the above. The psychometric parameters of a mental trait are its dimensions and outcome properties. Hypothesis H4 assumed that trait dimensions coincide with the value of individual accident index. On the basis of that dependence it was expected that participants with low results in risk propensity, absent-mindedness and depression measurements would be involved in accidents less frequently than persons who obtained high results in the measurements of the above traits. In the research reported here it has been decided to verify the legitimacy of such expectations. First, the traits which correlated with accident index value were distinguished, then two groups of the results were formed: high results - higher than the median, and low-below median value. As a consequence, six groups were obtained which differed as to the dimensions of three analysed traits. For each such group the value of accident frequency index has been estimated, which is presented in Figure 3. In the left-hand side of Figure 3 the accident index

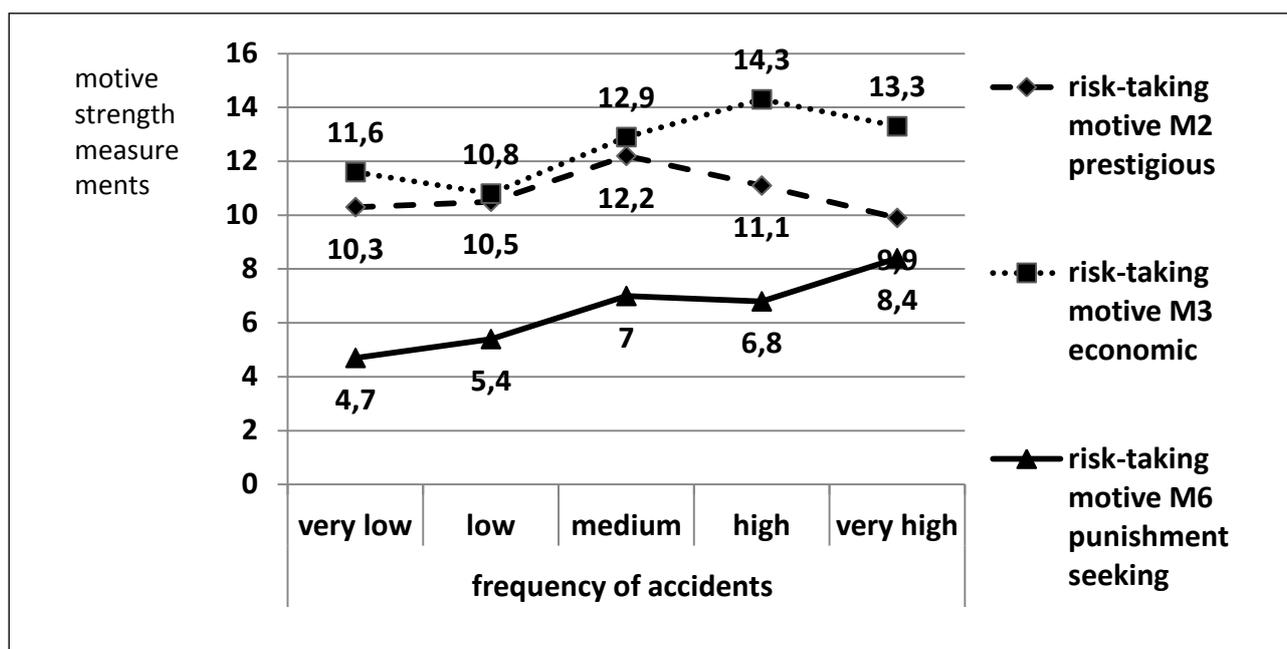


Fig. 2. Strength of risk-taking motive in persons varied in terms of accident frequency

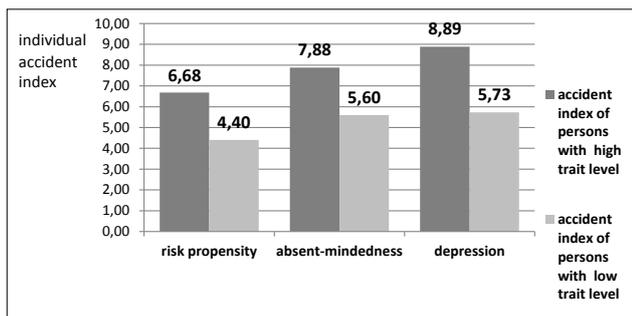


Fig. 3 Safe and unsafe behaviours and accidents

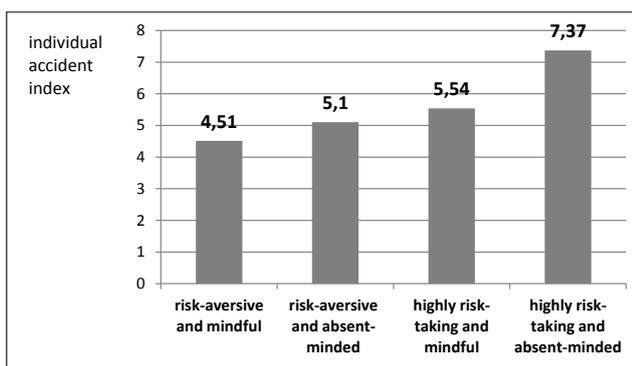


Fig. 4. Risk and absent-mindedness dimensions and accidents

of persons with high risk propensity is presented (darker part of the histogram) as well as accident index of persons with low risk propensity (lighter part of the histogram).

The above groups differed significantly in terms of accident causation frequency. Persons prone to take risks caused more accidents in comparison with persons with low risk propensity ($d=2.28$; $t=4.47$; $p<0.005$). Likewise, differences in accident index level have been found to occur between persons with high and low absent-mindedness ($d=2.28$; $t=3.17$; $p<0.001$) and between participants with high and low depression level ($d=3.16$; $t=5.15$; $p<0.005$).

Traits presented in figure 3 are correlated with the value of accident index. Each of these traits leads to dangerous incidents, although in a different way. A low dimension of each of the three traits which have been analysed denotes lower accident level in comparison with high trait dimension. Differences in accident level estimated for high and low values of analysed traits are significant.

DANGEROUS EFFECTS OF TRAIT COMBINATIONS

When designing this stage of the research the attempts were made to explain whether coincidence of two traits, differing or similar in terms of their effect on accident frequency changed the properties of those traits. In the

Table 4. Comparison of individual accident indices in persons with different levels of risk propensity and absent-mindedness

Group characteristics	Statistics	Statistics value	Groups compared; Tuckey test results	1	2	3	4
1 Low risk Low absent-mindedness	number of persons	54	1				
	arithmetic mean	4.52		0.975; ns	0.824; ns	0.070; ns	
	standard deviation	6.42					
2 Low risk High absent-mindedness	number of persons	39	2				
	arithmetic mean	5.10		0.989; ns	0.632; ns		
	standard deviation	5.60					
3 High risk Low absent-mindedness	number of persons	63	3				
	arithmetic mean	5.54				0.409; ns	
	standard deviation	5.55					
4 High risk High absent-mindedness	number of persons	54	4				
	arithmetic mean	7.37					
	standard deviation	6.70					

research results were collected, which allowed for the comparison of inter-trait relationships regarded as especially unfavourable from the point of view of maintaining safety. Coincidence of high depression with high absent-mindedness, high risk propensity with high depression, as well as high risk propensity with high absent-mindedness was rated among such unfavourable connections. The data presenting accident indices of coexisting trait pairs are displayed in Tables 4, 5 and 6, as well as in Figures 4, 5, and 6.

In the comparison of groups shown in Figures 4, 5, and 6, variance – analysis procedure has been used. Differences between groups have been tested by means of Tuckey test (HSD).

The results collected in Figure 4 and in Table 4 show that absent-mindedness in connection with risk propensity has not led to significant accident changes in groups with various combinations of those two traits.

Figure 5 and Table 5 show individual accident indices of absent-minded persons with depressive symptoms. The most frequent accident participants, according to the data obtained, are highly depressive persons with high absent-

mindedness. The accident indices of these persons are significantly higher than the indices of persons who are careful, irrespective of depression level.

Figure 6 and Table 6 collate the combination of depression and risk propensity levels. Among the four distinguished trait profiles, the combination of high depression with high risk propensity proved unfavourable. Persons with such characteristics participated in accidents significantly more frequently, in comparison with persons with

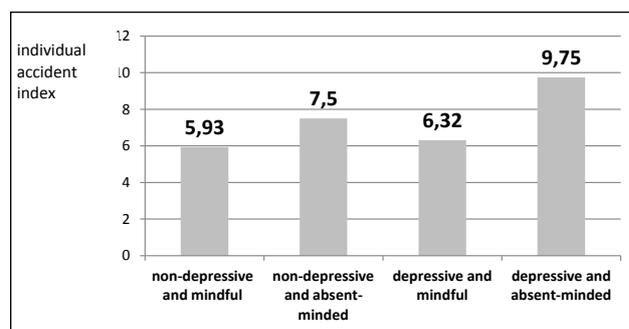


Fig. 5. Depression and absent-mindedness dimensions and accidents

Table 5. Comparison of individual accident indices in persons with different levels of depression and absent-mindedness

Group characteristics	Statistics	Statistics value	Groups compared Tuckey test results				
				1	2	3	4
1 Low depression Low absent-mindedness	number of persons	94	1				
	arithmetic mean	5.93		0.784; ni	0.989; ni	<0.0002	
	standard deviation	6.35					
2 Low depression High absent-mindedness	number of persons	32	2			0.896; ni	0.534; ni
	arithmetic mean	7.50					
	standard deviation	7.58					
3 High depression Low absent-mindedness	number of persons	59	3				<0.030
	arithmetic mean	6.32					
	standard deviation	4.60					
4 High depression high absent-mindedness	number of persons	82	4				
	arithmetic mean	9.76					
	standard deviation	7.92					

low depression and high risk as well as in comparison to persons with high depression and low risk.

A detailed analysis revealed, that accident index variation is the result of connections between traits, which proved to be the relationship between depression and risk, as well as depression and absent-mindedness, whereas the correlation between risk propensity and causing accidents was found to be insignificant.

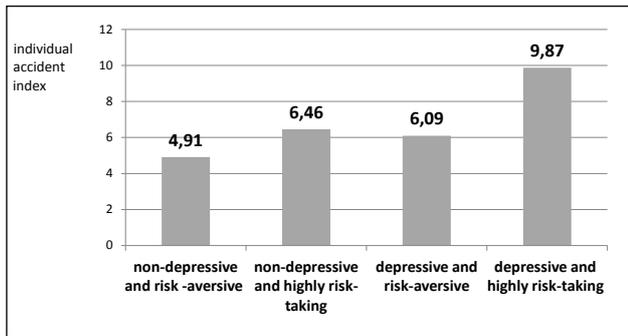


Fig. 6. Depression and risk-taking dimensions and accidents

Discussion

The term accident rate is usually used to introduce the number of accidents occurring during certain time in an organization. In the research reported here, the notion of accident rate was treated as an individual trait representing a property describing fallability level. An aggregated accident index, comprising three different accident severity levels, was used to measure individual accident rate. The aim of the research was to explain the relations between accident rate and individual traits correlated with causing accidents: risk propensity, absent-mindedness, and depression, as well as motives inducing a person to take risks. Five hypotheses were formulated, assuming the existence of relations between the dimension of distinguished traits and accident rate, possibilities of causing accidents under the influence of self-destructive motivation, as well as interaction of effects of the analysed traits. In agreement with the results of numerous previous research studies it was found that risk propensity was strongly correlated with causing accidents. In search for evidence of common occurrence of risk and

Table 6. Comparison of accident individual indices in persons with different levels of depression and risk

Group characteristic	Statistics	Statistics value	Groups compared; Tuckey test results	1	2	3	4
1 Low depression Low risk	number of persons	129	1		0.411; ni	0.788; ni	<0.0005
	arithmetic mean	4.91					
	standard deviation	5.69					
2 Low depression High risk	number of persons	92	2			0.991; ni	<0.004
	arithmetic mean	6.46					
	standard deviation	5.57					
3 High depression Low risk	number of persons	58	3				<0.020
	arithmetic mean	6.09					
	standard deviation	6.30					
4 High depression High risk	number of persons	108	4				
	arithmetic mean	9.87					
	standard deviation	8.83					

causing accidents, accident rate was compared for men and women selected for the research solely on the basis of gender, and after dividing the results of men and of women into groups with similar risk propensity. Such comparison showed that safer behaviour of women in comparison to men, which is demonstrated in numerous statistics, is not the result of specific gender properties, but the result of the differences in the domain of risk propensity. Women are less prone to take risks, therefore they make fewer mistakes, which lead to accidents. This conclusion concerns mainly the relationship between risk propensity and causing of accidents, but it also suggests that the reduction of accident rate should be preceded by actions which would lower the level of risk propensity.

In the comparison of traits and motivation of persons differing as to the level of aggregated individual accident index, attempts were made to determine the parameters of traits and motives, which would differentiate participants who rarely cause accidents from participants frequently involved in accidents.

In trait analysis significantly higher results were found to occur in persons frequently causing accidents. Participants with high value of aggregated accident index were more prone to take risk, more absent-minded, and more depressive than participants functioning safely. Other differences were revealed in the analysis of motives. Biophillic motives – hedonistic, economic and altruistic were slightly stronger in persons frequently causing accidents, but differences between the levels of these motives were not significant. Self-destructive motives were relatively weak in persons rarely causing accidents, stronger in persons who caused accidents with average frequency and comparatively much higher in persons who frequently cause accidents.

Individual accident indices were compared in persons characterized by certain combinations of traits, for example high risk propensity with low absent-mindedness, high depression with high risk propensity, high absent – mindedness with high depression, and the like. In total, accident rate for twelve trait combinations was analysed. The highest values of aggregated accident indices were found in persons with high depression and high absent-mindedness, as well as in persons with high risk propensity and also high depression level. Low accident index, on the other hand, was the result of combining low depression with risk avoidance and of co-occurrence of low absent-mindedness with low risk-propensity. On the basis of comparing all the combinations it can be concluded that when one trait from a given pair has low dimension, the accident index is lower than the accident index in situations, in which two traits have high level of dimensions; also a pair of two traits with low measurements is characterized with low accident index.

Out of five hypotheses which were verified, four proved to be true. It was found that risk propensity was correlated with accident rate and that persons who did not differ in risk propensity did not differ in frequency of causing accidents,

either. Persons who cause accidents frequently are more risk-prone, more absent-minded, and go through depressive moods to a greater degree, in comparison to persons who rarely cause accidents. This observation only partially concerns risk-taking motives. Biophillic motivation in the group of persons frequently involved in accidents and in the group of persons rarely causing accidents is similar in terms of strength. Self-destructive motives are more pronounced and significantly stronger in persons frequently causing accidents than in persons rarely causing them. This fact indicates that self-aggression is a reason of some accidents, especially the ones caused by depressive persons.

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