

Original Article

The Stimulating and Instrumental Risk Questionnaire - motivation in sport

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Abstract:

The article contains data on the Stimulating and Instrumental Risk Questionnaire (S&IRQ). Risk taking may be inspired by two motives: 1. pleasure (stimulating risk), 2. achieving an important objective (instrumental risk). Stimulating risk is perceived as a way to get stimulation through increased physiological arousal. Gain, win or loss is of no importance as activity is intended to cause a pleasant state of excitement that is an end in itself. Instrumental risk is perceived as a chance to obtain a positive result. It is a future gain that makes individuals search for instruments to increase the likelihood of success. The stimulating and pleasurable aspect of risk taking is not important. The questionnaire may, in particular, be used for studying individuals, whose professional or sports activities are performed in the conditions of great emotional strain and whose efficacy depends on the degree of taken risk (stimulating or instrumental one).

Keywords: instrumental vs. stimulating risks; perception of risk, risk factors.

Introduction

In this article, risk is understood as an outcome of a consciously made decision about potential loss, damage or gain while risky behaviour is considered a voluntary action which, consequently, can make the subject experience distress or aggression, enjoy a benefit, have an accident or achieve an intended goal (obtain a specific benefit).

P. Slovic (2004) proposed distinguishing between two types of risk: risk as analysis and risk as feelings. Terms suggested by P. Slovic are a mere simplification as risk itself is not an emotion, but may serve to bring about strong emotional arousal.

Athletes doing high-risk sports regularly “put” themselves in situations, where their health and life depend on their own abilities. Success or failure often means life or death. In no other circumstances do one’s abilities play such a vital role. Those individuals derive the most satisfaction from extreme sensations because their risk assessment depends solely on their own competence (Kurtz, 1988). Rock or mountain climbers, hang-glider pilots, parachutists, etc. believe that everyday life situations at work or home are often more dangerous than those they face, e.g. in the mountains or air. That results from the fear of mistakes made by others, which cannot be made up for by one’s own abilities. On a climbing route or during a flight, one may feel safer than on a motorway, as there are no other people who may behave unprofessionally. Similar statements can be heard from stuntmen and professional divers, who claim that they would not want to have a risk-taker in their teams, as that would make them feel unsafe (Piet, 1988).

There may be two different motives behind risk taking:

1. pleasure (**stimulating risk**),
2. achieving an important goal (**instrumental risk**).

Stimulating risk occurs when the aim of risky behaviour is to experience pleasant physiological arousal, pleasure – e.g. sex, drugs, extreme sports. That kind of risk is to give a thrill. Taking such a risk is mainly influenced by the need for stimulation and is not preceded by analysing possible losses.

The concept of this questionnaire draws directly on numerous theories concerning the so-called optimum stimulation (or activation) level, claiming that one’s achievement of such an optimum level determines a specific motivational impulse to take an action or refrain from it, which depends, on one hand, on the sum of experienced sensations and, on the other hand, on the specific, individual need for stimulation (Zuckerman, 2000, 2005, 2007; Llewellyn & Sanchez, 2008).

Stimulating risk taking is impulsive and characterised by low self-control. The individual does not focus on potential gains – it is of no importance that he or she will lose money or take the last place in a sports competition. What counts is the very participation in a risky situation. Stimulating risk taking entails domination

of the emotional information processing system. It is a desire to experience positive emotions that makes the individual take a risk.

The other type of risk is one that is needed by the individual to attain an intended goal (Brunet, Sabiston, 2011). In that case, positive emotions can be felt as a result of actions taken and are not their aim. Risk is seen as a mere tool – an instrument used when striving for a goal – hence, its name: instrumental risk. That kind of risk is controlled because no spontaneous actions are taken and risky ones result from cool calculations focused on achieving an expected result. Risk is rational and included in the costs of attaining a goal. It is most often accompanied by high self-control of the individual taking the risk. In an instrumental risk situation, the individual takes also possible losses into account; however, his or her main objective is to achieve positive results in the area of his or her interest. Instrumental risk taking is connected with assessing the size of possible losses and requires appropriate behaviour (strategy, tactics) on the path to a set objective. It is assumed that taking a risky action results from a need being understood in various ways. It may be a need to adapt to existing conditions, survive, maintain positive self-image, a desire to reach a goal, whose pursuit requires the individual to take risky steps. Irrespective of how that need is construed, risky behaviours are displayed because the individual has to take a specific action. Instrumental risk may concern economic behaviours, e.g. investing in the stock market, or typical sports behaviours, e.g. an analytical chess game or tactical decisions made during flying contests or a cross-country race. It can be assumed that the subject taking an instrumental risk is motivated to think in an analytical and rational way.

TABLE 1. *Comparison of characteristic features of stimulating and instrumental risks*

Stimulating risk	Instrumental risk
More focus on gains	Focus on possible losses
More prominent role of emotional processes	More prominent role of cognitive processes
Unconscious information processing	Mainly conscious information processing
Making decisions impulsively	Making decisions thoughtfully
One cannot control that risk	One can control that risk

Note. Own work based on Zaleśkiewicz, 1999, p. 76.

Method

Detailed psychometric analyses were performed on four independent groups of individuals: the group of Poles (the Polish language) and three groups of individuals using English on an everyday basis: Norwegians (mainly studying in English), Americans, and Southern Europeans: Greeks, Italians, and Spaniards (mainly studying in English). Statistical analyses used Statistica 9 and Amos 18.

TABLE 2. *Ages of studied individuals in particular groups*

Group	N	N females	N males	M	SD	Minimum	Maximum
Poles	3,612	2,272	1,340	23.89	8.93	14	77
Norwegians	752	377	375	26.08	7.75	18	75
Americans	93	48	45	26.90	7.98	15	64
Greeks, Spaniards, and Italians	355	170	185	26.62	8.15	15	69

Table 3 below shows the mean levels of stimulating and instrumental risks in the studied groups. Due to inequilateral groups, variance analysis applied Scheffe's test.

TABLE 3. *Stimulating and instrumental risk levels in studied groups*

Group	Results	Norwegians 1	Poles 2	Americans 3	Greeks, Spaniards, Italians 4	Differences
Stimulating risk	M	11.95	13.64	13.84	13.17	1:2; 1:3; 1:4
	SD	4.00	4.17	3.85	3.87	
Instrumental risk	M	10.93	10.94	10.38	11.01	No statistically significant differences
	SD	2.65	2.97	2.71	2.65	

Statistically significant differences occurred in stimulating risk levels between Norwegians and the other groups ($F=35.85$; $p<0.001$).

Results

Table 4 presents reliability indices for two scales (dimensions) and item discrimination powers based on the study on 752 individuals from Norway. The results of analysis indicate that the reliability of the scales singled out is highly satisfactory for both sexes.

TABLE 4. *S&IRQ item characteristics and scale reliabilities – group of Norwegians*

Variable	Number of items	Entire group (N=752)		Females (N=377)		Males (N=375)	
		Cronbach's alpha	r mean	Cronbach's alpha	r mean	Cronbach's alpha	r mean
Stimulating risk	4	0.80	0.50	0.79	0.49	0.78	0.48
Instrumental risk	3	0.65	0.43	0.66	0.40	0.71	0.46

Structural Model Quality Examination

The assessment of the model began with the verification of measuring model.

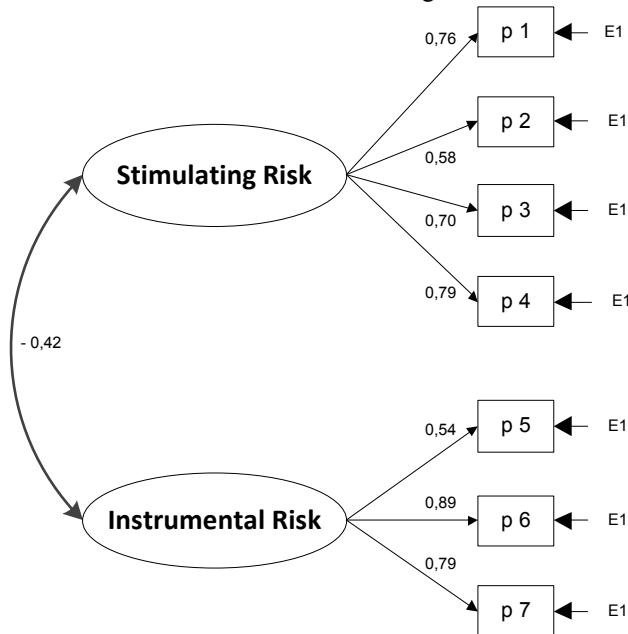


Diagram 1. Resulting model of risk factor structure in S&IRQ (group of Norwegians).

All parameters of the structural model are significant ($p < 0.001$). Correlations between stimulating and instrumental risks are negative: $r = -0.42$.

There is no consensus as to which measures are the most suitable for the model fit assessment, thus several tests of the model's goodness of fit are used. Most standard model measures allow merely to compare models, instead of objectively assessing their fit, except for the commonly recommended RMSEA, GFI, and AGFI. Table presents six model fit indices.

TABLE 5. *Model fit indices in two independent groups*

Model fit indices	RMSEA	PCLOSE	Chi-square	df	p	GFI	AGFI
Group of Poles (N=3,612)	0.057	0.053	168.89	13	<0.001	0.989	0.976
Group of Norwegians (N=752)	0.056	0.219	30.18	13	0.002	0.973	0.943
Group of Americans (N=93)	<0.001	0.715	11.77	13	0.546	0.980	0.958
Group of Southern Europeans (N=355)	0.061	0.232	30.20	13	0.004	0.982	0.960

To sum up, we can state that the presented model's goodness of fit tests affirmatively answered the question whether the hypothetically assumed model can be verified by distribution of results acquired from the data matrix for all the studied groups.

Description of S&IRQ Dimensions

The Stimulating and Instrumental Risk Questionnaire is used to measure the style of perception and interpretation of risky behaviours. It distinguishes between two styles of risky behaviours: stimulating (S) and instrumental (I).

Stimulating risk – risk is perceived as a way to get stimulation through increased physiological arousal. Important elements are focusing on activity and seeking sensations by searching for highly stimulating situations that bring pleasure, irrespective of the outcome. Gain, win or loss is of no importance as activity is intended to cause a pleasant state of excitement that is an end in itself.

Instrumental risk – risk is perceived as an opportunity for a positive result. Risk is taken only when there is a chance of win or gain. The stimulating aspect of risk taking is of no importance. That kind of risk requires rational thinking and orientation solely towards a goal as it is only winning that counts and a possible future win makes individuals look for tools to increase their likelihood of success.

Study Procedure

The questionnaire can be used in individual and collective studies. Answers are assigned a specific number of points as follows: True = 5; Rather true = 4; Hard to say = 3; Rather untrue = 2; Untrue = 1. The (stimulating risk) dimension includes the following statements: 1, 3, 5, 7. The minimum score is 4, and the maximum score is 20. The (instrumental risk) dimension includes the following statements: 2, 4, 6. The minimum score is 3, and the maximum score is 15.

Summary

The Stimulating and Instrumental Risk Questionnaire is a tool answering the question about motivation behind risk taking. On one hand, it can be a solely pleasurable motivation when a risk-taking individual focuses only on possible benefits offered by positive emotions. In that state, decisions are made in an impulsive and unconscious manner. On the other hand, it can be instrumental motivation when a risk-taking individual looks at a risky situation from a certain distance so that conscious, controlled cognitive processes can lead to winning, ensuring victory or achieving an intended goal. In that case, the focus is on the chance of a possible loss and the analysis of the loss is to help choose a successful strategy.

As shown by the analyses, the level of stimulating risk is much lower in Norwegians than in Poles, Americans as well as Greeks, Spaniards, and Italians.

It seems that an advantage of the presented questionnaire is the ease and time of its application (it consists of only seven questions). It can be widely used in those areas of human activity that are associated with risk taking. It can be applied by coaches of various sports interested in the relationship between motives behind risks taken by athletes and their achievements. It can be used in studies concerning representatives of various professions (business people, police officers, soldiers, health service employees, firemen, politicians), in which specific motivation for risky behaviours may bear a significant relationship to the quality of the decisions made.

The Stimulating and Instrumental Risk Questionnaire (S&IRQ)

Ryszard Makarowski

Please remember that there are no “correct” or “incorrect” answers, only truthful ones count.

Please mark your answer with an X.

		True	Rather true	Hard to say	Rather untrue	Untrue
1	When I pursue my passions, I like the moments of balancing on the edge of risk.	☐	☐	☐	☐	☐
2	I take the risk only when it is necessary to reach my goal.	☐	☐	☐	☐	☐
3	Sometimes, I unnecessarily tempt fate.	☐	☐	☐	☐	☐
4	When I have to risk, I carefully calculate the possibility of failure.	☐	☐	☐	☐	☐
5	I am attracted to various hazardous actions (e.g. travelling across remote, unknown places) even if I do not know what can happen to me there.	☐	☐	☐	☐	☐
6	Before taking a risky decision, I always thoroughly consider all pros and cons.	☐	☐	☐	☐	☐
7	Sometimes I risk to feel the “adrenaline” because that makes me feel that I really live.	☐	☐	☐	☐	☐

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