

THE DECISION-MAKING STYLE STRUCTURE OF SLOVENIAN SPORTS MANAGERS

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ABSTRACT

Purpose: *Decisions that we make are always burdened with consequences, which are the inevitable result of our decision-making. The decision-making style (DMS) is the way in which managers acquire, process and use information in decision-making processes. The goals of the present research are to define the factor structure of DMS for a sample of Slovenian sports managers and to determine the characteristics of their DMS structure.*

Methods: *80 managers of Slovenian sports organizations filled in an anonymous internet survey. The DMS was measured with the use of the General Decision-Making Style Inventory (GDMS), which was translated into the Slovenian language. The GDMS questionnaire measures five different decision-making styles: rational, intuitive, dependent, avoidant and spontaneous. The factor analysis (FA) method was used to test the assumption about the structure of the DMS. The internal consistency was measured using Cronbach's alpha coefficient. The Pearson correlation coefficient was used to study the relationship between the DMS.*

Results: *After three successive implementations of FA, we developed an optimized DMS model with 20 items confirming that when making decisions, sports managers use a combination of all five DMS. Slovenian sports managers mostly use the rational and dependent DMS, indicating that they are mostly rational decision-makers. We also recognized the correlation between the rational and the dependent style, but since the structure of the DMS in our sample is dominated by the rational DMS, we could conclude that this is a dependent-rational DMS, where managers seek advice, opinions and knowledge from colleagues when making decisions to increasing their rationality.*

Conclusions: *We can conclude that the recognized average structure of the DMS is functional and healthy; furthermore, Slovenian sports managers are on average rational decision-makers who, due to the specific organizational characteristics of sports organizations, look for confirmation and opinions on future decisions in the broader environment of the organizations' stakeholders.*

Keywords: *Slovenian sports managers, decision-making styles, structure.*

STRUKTURA STILOV ODLOČANJA SLOVENSКИH ŠPORTNIH MENEDŽERJEV

IZVLEČEK

Namen: *Odločitve, ki jih sprejemamo, so vedno obremenjene s posledicami, ki so neizogiben rezultat našega odločanja. Stil odločanja (DMS) je način, na katerega menedžerji pridobivajo, obdelujejo in uporabljajo informacije v procesih odločanja. Cilja te raziskave sta opredelitev faktorske strukture DMS na vzorcu slovenskih športnih menedžerjev in opredelitev značilnosti strukture njihovih stilov.*

Metode: *80 menedžerjev slovenskih športnih organizacij je izpolnilo anonimno spletno anketo. DMS je bil merjen z uporabo splošnega vprašalnika stilov odločanja (GDMS), ki je bil preveden v slovenski jezik. Vprašalnik GDMS meri pet različnih stilov odločanja: racionalnega, intuitivnega, odvisnega, izogibajočega in spontanega. Za preverjanje predpostavke o strukturi DMS je bila uporabljena metoda faktorske analize (FA). Notranja konsistentnost je bila preverjena s Cronbachovim koeficientom. Pearsonov korelacijski koeficient je bil uporabljen za proučevanje povezanosti med stili odločanja.*

Rezultati: *Po treh zaporednih izvedbah FA smo razvili optimiziran model stilov odločanja z 20 postavkami vprašalnika, ki potrjuje, da športni menedžerji pri odločanju uporabljajo kombinacijo vseh petih stilov odločanja. Večinoma uporabljajo racionalni in odvisni stil, kar kaže, da so večinoma racionalni odločevalci. Ugotovljena je bila tudi korelacija med racionalnim in odvisnim stilom, ker pa v strukturi našega vzorca prevladuje racionalni stil, bi lahko sklepali, da gre za odvisno-racionalni stil odločanja, v okviru katerega menedžerji pri sprejemanju odločitev iščejo nasvete, mnenja in znanje pri sodelavcih zaradi povečanja racionalnosti svojih odločitev.*

Zaključek: *Ugotovili smo, da je ugotovljena povprečna struktura stilov odločanja funkcionalna in zdrava. Slovenski športni menedžerji so v povprečju racionalni odločevalci, ki zaradi posebnih organizacijskih značilnosti športnih organizacij iščejo potrditev in mnenja o prihodnjih odločitvah v širšem okolju deležnikov organizacije.*

Ključne besede: *slovenski športni menedžerji, stili odločanja, struktura.*

INTRODUCTION

Decision-making is a process resulting in a decision (Tomić, 2007). “*Decisions are an essential part of our lives, both in the work environment and outside of it. Decisions are made by those who are responsible for choosing between two or more options,*” (Heller & Hindle, 2001). A decision, as a result of a decision-making process, can be defined as “*a judgment or choice between two or more options that develops from an infinite number of situations, from solving a problem to taking action in a certain direction,*” (Heller & Hindle, 2001). Bohanec (2012) writes that a decision is a conscious and irreversible sharing of resources with the aim of achieving the desired goals. The decisions we make are always burdened with consequences, which are inevitable results of our decision-making. Therefore, it is particularly important how we decide on matters (or problems).

The decisions we make define our past and significantly design our future. Decisions made by managers about a company define the company's past performance, its current market, economic and social position and its future place in the industry, national economy and global environment. The essence of the managerial function is the *coordination* of technically divided work and the implementation of the joint work tasks of the association with the help of others; i.e., *delegating* and solving problems that arise, or making *decisions*. Thus, we could define the *content* of management work as coordination and delegation (responsibilities, duties and powers), while the *method* of managerial work is decision-making (Kolar & Jurak, 2014). Because of this, managers are often called decision-makers (Daft, 2010). The results of their decisions are reflected in the growth, prosperity or collapse of the organizations they deal with (Daft, 2008). Simon (1960) wrote that decision-making and management are synonymous terms. The general idea of the decision maker is an individual who evaluates and chooses between possible decisions. When solving problems, decision-makers are faced with situations representing a gap between the desired (the goal of the decision) and the actual state (initial state); in order to bridge this gap, they perform intellectual (cognitive) activities, while the future steps that need to be taken are unknown (Klein & Methlie, 1992). Every decision refers to an object, and the reason for its adoption is a certain purpose, which manifests itself as an intended change of that object in favour of the one who makes the decision (Rozman & Kovač, 2012). A fundamental condition for ensuring the success and efficiency of an organization is that the managers at all levels of management make valid decisions.

Simon (1987) claims that it is highly unlikely to find two types of managers (at least not good managers) who can be classified as making decisions solely based on intuition or making decisions solely based on rational/analytical techniques. It is more likely that we will find a range of combinations or the related use of intuition and rational-analytical techniques in decision-making processes. Rowe, Boulgarides and McGrath (1984) point out that the *decision-making style* reflects the way a person uses information to make decisions. Avsec (2012) accordingly stated that, despite the fact that the nature of the problem and situational factors play an important role in decision-

-making, we can assume that, regardless of the decision-making problem, individuals differ in the frequency of use of individual decision-making styles. Remenova and Jankelova (2019) state that the decision-making style can be understood as the result of a cognitive process that leads to the choice of solutions from among several alternatives. The authors also note that managers generally use a combination of at least two decision-making styles, varying based on the characteristics and weight of the decision problem. Driver (1979) defined decision-making styles as learned patterns of response that people use when making decisions. The decision-making style is therefore the way managers acquire, process and use information in decision-making processes. This is a set of qualitative indicators that manifest themselves within the decision-making process in the form of a decision-making style and represent a typical method of enforcing decisions. Managers' decision-making styles significantly contribute to their individual performance and thus to the performance of organizations (Abdelsalam, Daeoud & ElKadi, 2013); therefore, as pointed out by Rowe and Boulgarides (1992), they need to be measured, because decision-making styles should form the backbone of effective decision-making. Knowledge of decision-making styles and their use in the management structure directly contributes to increasing the competitive advantage of organizations (Remenova & Jankelova, 2019) and can also represent one of the main sources of risk for the successful operation of organizations.

Several authors have worked on defining decision-making styles. It is typical of research in the field of decision-making styles that in addition to defining the styles, authors often build different models and constructs, including a varying number of decision-making styles, as well as different inventories for determining the dominant styles of individual subjects (Harren, 1979; Rowe & Mason, 1987; Hunt, Krzystofiak, Meindl, & Yousry, 1989; Scott & Bruce 1995; Nygren, 2000). Berisha, Pula and Krasnqi (2018), based on a review of a large number of studies, concluded that one of the most frequently used and validated questionnaires for discovering decision-making styles is the General Decision-Making Style Inventory (GDMS) developed by Scott and Bruce (1995). Scott and Bruce (1995) defined decision-making styles as a learned response or behavioural pattern of an individual who is faced with a decision-making situation. They claimed that it is not a personality trait, but rather a tendency to react in a specific way in a decision-making situation, whereby the characteristics of the situation itself can have a significant influence. The authors also stated that individual styles are not mutually exclusive and that individuals do not rely exclusively on one decision-making style. The results of their study showed that individuals use a combination of decision-making styles when making important decisions. Based on the questionnaire, which contained 37 items and was used on the initial sample of subjects (military officers), with the use of factor analysis, the authors discovered a structure based on five factors (decision-making styles) and then reduced the questionnaire to 25 items. In the subsequent steps of the analysis, the questionnaire was tested with the use of the factor analysis method (the principal axes method with varimax factor rotation) on the remaining three different samples. The results of the study showed that the structure of the decision-making styles consists of five styles and that the questionnaire can be used

regardless of the decision-making context or situation (Scott & Bruce, 1995). The five decision-making styles included in the GDMS inventory are defined as (Thunholm, 2004; Faletič & Avsec, 2013):

- *rational style*: characteristic of people who search for information in detail and comprehensively and logically evaluate all the alternatives. They mainly focus on logic, order and the systematic analysis of information;
- *intuitive style*: characteristic of those who pay a lot of attention to details in the information flow and, instead of systematically searching and processing information, mainly consider their feelings about whether a certain decision is correct or not;
- *dependent style*: characteristic of people who seek advice, support and confirmation from others before making an important decision;
- *spontaneous style*: characteristic of those who have a sense of urgency and thus a desire to complete the decision-making process as soon as possible and make a decision;
- *avoidant style*: characteristic of people who want to avoid making a decision whenever possible.

In various studies on samples from different countries, numerous authors (Loo, 2000; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Gambetti, Fabbri, Bensi & Tonnetti, 2008; Curşeu & Schrujjer, 2012; Erenda, Meško & Bukovec, 2014; Bavoľár & Orosová, 2015; Alacreu-Crespo et al., 2019) have confirmed the validity (using factor analysis) and reliability (using Cronbach's alpha coefficient) of the GDMS inventory as suggested by Scott and Bruce (1995).

In the aforementioned preliminary research, the authors tested the validity of the five-factor structure of decision-making styles on samples of managers, various profiles of students, the general population, military officers and others. In the present study, we will determine the factor structure of decision-making styles using a sample of Slovenian sports managers. Sports managers usually work in the specific environment of non-profit sports organizations, which in terms of legal, structural and procedural characteristics, are significantly different to for-profit organizations (companies). One of the important characteristics of sports organizations is that they are interest-type associations, in which the interests of different stakeholders are in constant conflict (Tavčar & Trunk Širca, 2002). Participants in sports organizations are individuals (officials, coaches and athletes), groups (professional and other) and associations (societies and clubs), all with their own interests and with the possibility of significantly acting and influencing the operation of the organization. Furthermore, in non-profit sports organizations, it is necessary to deal with a large number of volunteers (Santos, Batista & Carvalho, 2022) and to generate and obtain financial resources from a large number of different sources (sponsorships, donations, national and local budgets, sales of products and services, etc.). Finally, a "unique" governmental-managerial process is established in non-profit sports organizations; they are led by a committee of elected volunteers (governmental organizational function) who form very sensitive relations with professional (management) staff (Young, 1998; Kolar & Jurak, 2014).

All of the aforementioned specifics of the structure and operation of non-profit sports organizations have a significant impact on the management and decision-making processes in these types of organizations and thus probably on the structure of the decision-making styles of the sports managers. The goals of the present research are to define the factor structure of decision-making styles using a sample of Slovenian sports managers and to determine the characteristics of their structure of decision-making styles. According to the described structural and operational differences in the functioning of non-profit sports organizations, we can define the hypothesis that in the structure of decision-making styles of the sample of managers in our research, the dependent decision-making style will be more emphasized than the intuitive and spontaneous style, which enables faster and quick decisions. We assume that sports managers have to coordinate decisions with much more diverse stakeholder interests than is typical for for-profit organizations (companies).

METHODS

Participants

The sample consisted of 80 managers of Slovenian sports organizations, which is more than the minimum requirement for executing the factor analysis (de Winter, Dodou & Wieringa, 2009, Andrew, Pedersen & McEvoy, 2010). The average age of the subjects was 47.5 ± 10.6 years and the average work experience as a manager was 15.61 ± 9.7 years. The upper age limit was 68 years, whereas the lower age limit was 28 years. The most experienced manager had 40 years and the least experienced 1 year of work experience. The sample consisted of 56 men (70%) and 24 women (30%). The sample is comparable to samples of sports managers by other authors (Barros & Lucas, 2001; Case & Branch, 2003; Retar, Plevnik & Kolar, 2013). The Slovenian Olympic Committee sent the managers of Slovenian sports organizations an invitation to participate in the study and to fill in an anonymous internet survey. The invitation was sent three times at one-month intervals. All the subjects participated in the study voluntarily and without any compensation.

Instrument

The decision-making style was measured with the use of the General Decision-Making Style Inventory – GDMS (Scott & Bruce, 1995), which was translated into the Slovenian language. The GDMS questionnaire measures five different decision-making styles: rational, intuitive, dependent, avoidant and spontaneous. The questionnaire consists of 25 items (5 for each decision-making style) ranging on a five-point Likert scale from strongly disagree (1) to strongly agree (5). The total score of all five decision-making styles was obtained by adding the item score of the decision-making

style and the score ranges from 5 to 25. GDMS scales have previously shown good psychometric characteristics (Scott & Bruce, 1995; Loo, 2000; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Gambetti, et. al, 2008; Curșeu & Schruijer, 2012; Avsec, 2012; Erenda, et al.; 2014; Bavolár & Orosová, 2015; Alacreu-Crespo, et. al, 2019). In this study, the alpha coefficients of the scales ranged between 0.572 (spontaneous) and 0.814 (avoidant). The Cronbach's alpha for the whole GDMS is 0.69, which is a good indicator of internal consistency. The Slovenian version of the GDSM inventory has already been used and validated in several research projects and using different samples in Slovenia (Avsec, 2012; Faletič & Avsec, 2013; Erenda, et al.; 2014); in the present study, general information questions about gender, age, experiences in management, level of education and field of education were added.

Statistical Analysis

Statistical data processing was carried out using the Statistical Package for the Social Sciences 29 (IBM SPSS Inc., Armonk, NY, USA). The factor analysis method – Principal Component Factoring (PCF) and varimax rotation of factors – was used to test the assumption about the structure of decision-making styles (Scott & Bruce, 1995). Factor extraction was carried out with the use of Kaiser-Guttman's criterion (Eigenvalue > 1). Before applying the factor analysis (FA), the data adequacy was tested with the Keiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of sphericity. Values of the KMO test above 0.6 indicate that the analyzed data is suitable for the use of FA (Tabachnick & Fidell, 2007). Bartlett's test must show significant differences at a risk level of less than 5% ($p < 0.05$), showing that the correlation matrix is not uniform and that the observed variables are related to a certain extent. The internal consistency of the overall scale and subscales was measured using Cronbach's alpha coefficient. Pearson correlation coefficient was used to study the relationship between the GDMS' styles.

RESULTS

Table 1 shows descriptive statistics for five decision-making styles. The average values of the individual decision-making style use (Mean/Value) were calculated from the original model of items assigned to an individual decision-making style (Scott & Bruce, 1995). The average share of the individual decision-making style use (Mean/% of maximum) in relation to the maximum possible total value of the sum of items originally dedicated to the individual decision-making style (maximum = 25) was calculated for each decision-making style.

Table 1: Descriptive statistics and internal consistency of decision-making styles.

Variable	Possible rang	Actual range	Mean		Standard Deviation	Skewness	Kurtosis	Cronbach α
			Value	% of maximum				
DMS Rational	5-25	15-25	21.35	85.40%	2.081	-0.283	0.885	0.777
DMS Intuitive	5-25	7-21	15.30	61.20%	3.235	-0.537	0.024	0.667
DMS Dependent	5-25	10-23	17.53	70.10%	3.027	-0.211	-0.365	0.694
DMS Avoidant	5-25	5-18	9.21	36.85%	3.129	0.439	-0.508	0.814
DMS Spontaneous	5-25	6-20	12.80	51.20%	2.558	0.122	-0.044	0.572

Key: DMS Rational = rational style; DMS Intuitive = intuitive style; DMS Dependent = dependent style; DMS Avoidant = avoidant style; DMS Spontaneous = spontaneous style.

The structure of the decision-making styles (Table 1) revealed that Slovenian sports managers on average most often use the rational and dependent decision-making styles. These are followed by the intuitive and spontaneous decision-making styles whereas sports managers in Slovenia are least likely to use the avoidant decision-making style. Similar results on the structure of decision-making styles in different samples (middle managers, teachers, students, military officers and engineers) were also found by other authors (Scott & Bruce, 1995; Hariri, Monypenny & Prideaux, 2014; Ghazi & Hu, 2016; Berisha, et al., 2018; Krasniqi, Berisha & Pula, 2019). The internal consistency, calculated using Cronbach’s alpha coefficient, was 0.686 for the overall scale and between 0.572 (DMS Spontaneous) and 0.814 (DSM Avoidant) for the five subscales. The reliability coefficient of the questionnaire items for the spontaneous style can be assessed as sufficient, while the other coefficients indicate moderate to robust internal consistency (Taber, 2018).

Before applying FA, the Kaiser-Meyer-Olkin (KMO) test and Bartlett’s test of sphericity (Table 2) were carried out to evaluate the factorability. The KMO measure of sampling adequacy was 0.689 (the required minimum is above 0.6) and the significance of Bartlett’s test of sphericity was 0.000 ($p < 0.01$). The results of both tests show that the studied sample is suitable for performing FA.

Table 2: The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity.

KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0,689	Bartlett's Test of Sphericity	Approx. Chi-Square	824.326
			df	300
			Sig.	0.000

The structure of the decision-making styles of Slovenian sports managers was verified by FA using the method of principal components with varimax rotation (Table 3). The FA procedure based on Kaiser-Guttman's criterion extracted seven (7) factors, which cumulatively explain 66.65% of the total variance. Table 3 shows a scree plot diagram with the factor eigenvalue curve bend at the fifth factor, meaning that a five-factor solution corresponds to the basic GDMS model and could also be considered a valid result of the FA (Scott & Bruce, 1995; Spicer & Sadler-Smith, 2005). Thus, the rotated solution with five factors explains 54.57% of the total variance of the observed variables.

Table 4 shows the factor structure and factor loadings of the items included in the GDMS inventory, which were obtained by the orthogonal rotation of the factors using the varimax method. It can be observed that all the items measuring a rational decision-making style (DMSRAT1 to DMSRAT5) from the original model are related to the first factor (factor loadings from 0.637 to 0.725). The first factor explains 13.91% of the total variance of the rotated solution (Table 3) and can be named the "rational style". The second factor is associated with four items measuring the avoidant style (DMSA-VO2, 3, 4 and 5) and one of the spontaneous decision-making style items (DMSSPO2). The projections of avoidant style items on the second factor are high (factor loadings from 0.663 to 0.876), while the projection of the DMSSPO2 on the same factor is very low (0.382). Therefore, the second factor can be named the "avoidant style", explaining 13.61% of the total space of the rotated solution (Table 3). The third factor (Table 4) is explained with three items measuring the intuitive decision-making style (DMSINT1, 2 and 5). Projections of items on this factor are very high for all three items (factor loadings from 0.797 to 0.871). The third factor explains 10.61% of the total variance of the rotated solution (Table 3) and can be named the "intuitive style". The fourth factor is explained with four dependent decision-making style variables (DMSDEP1, 2, 3 and 4) with relatively high projections on the factor (factor loadings from 0.636 to 0.788). The fourth factor explains 8.90% of the total variance (Table 3) and can be named the "dependent style". The fifth factor is explained with only two items, both belonging to the spontaneous decision-making style (DMSSPO1 and 3). Their projections on the factor are high (factor loadings 0.735 and 0.801). The fifth factor explains 7.54% of the total variance of the rotated solution (Table 3) and can be named the "spontaneous style". The sixth factor of the rotated solution is explained with four variables, which, in

Table 3: FA of the original GDMS inventory with 25 items.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.022	20.087	20.087	5.022	20.087	20.087	3.479	13.917	13.917
2	3.451	13.803	33.890	3.451	13.803	33.890	3.403	13.612	27.529
3	2.943	11.774	45.664	2.943	11.774	45.664	2.654	10.615	38.144
4	1.704	6.816	52.480	1.704	6.816	52.480	2.226	8.903	47.048
5	1.347	5.389	57.869	1.347	5.389	57.869	1.884	7.538	54.586
6	1.155	4.621	62.490	1.155	4.621	62.490	1.628	6.511	61.097
7	1.039	4.155	66.645	1.039	4.155	66.645	1.387	5.549	66.645
8	0.915	3.662	70.307						
9	0.860	3.441	73.748						
10	0.813	3.253	77.001						
11	0.700	2.799	79.800						
12	0.634	2.537	82.336						
13	0.620	2.481	84.817						
14	0.572	2.287	87.104						
15	0.471	1.886	88.990						
16	0.429	1.716	90.705						
17	0.398	1.594	92.299						
18	0.367	1.467	93.765						
19	0.329	1.318	95.083						
20	0.300	1.200	96.283						
21	0.267	1.068	97.351						
22	0.215	0.859	98.211						
23	0.171	0.683	98.894						
24	0.164	0.656	99.550						
25	0.112	0.450	100.000						

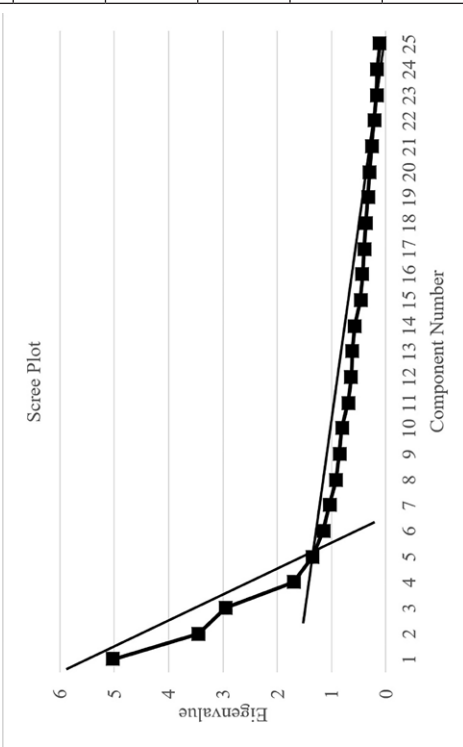


Table 4: Factor structure and factor loadings of the 25 items of the GDMS inventory.

Rotated Component Matrix ^a							
	Component						
	1	2	3	4	5	6	7
DMSRAT3	0.725						
DMSRAT5	0.716						
DMSRAT4	0.714						
DMSRAT1	0.670						
DMSRAT2	0.637						
DMSAVO3		0.876					
DMSAVO2		0.769					
DMSAVO5		0.760					
DMSAVO4		0.663					
DMSSPO2		0.382					
DMSINT2			0.871				
DMSINT5			0.821				
DMSINT1			0.797				
DMSDEP1				0.788			
DMSDEP4				0.679			
DMSDEP3				0.671			
DMSDEP2				0.636			
DMSSPO3					0.801		
DMSSPO1					0.735		
DMSDEP5						0.613	
DMSINT4						0.563	
DMSAVO1						0.479	
DMSSPO4						0.373	
DMSINT3							0.746
DMSSPO5							0.662

Notes: DMSRAT1-5 = rational style items 1 to 5; DMSINT1 – 5 = intuitive style items 1 to 5; DMSDEP1 – 5 = dependent style item 1 to 5; DMSAVO1-5 = avoidant style items 1 to 5; DMSSPO1 – 5 = spontaneous style items 1 to 5.

the original GDMS inventory model, are classified as different decision-making styles. With the exception of the rational style variables, all the other decision-making styles are related to this sixth factor. Projections of individual items in the sixth factor are lower than for the first five factors (factor loadings from 0.373 to 0.613). The sixth factor explains 6.51% of the total variance of the rotated solution (Table 3) and can be named the “*non-rational style*” or “*descriptive style*”, as the variables associated with this factor measure all the decision-making styles from the original model with the exception of the rational style. Items explaining this decision-making style deviate from the rational or normative model of decision-making, assuming that the decision-maker is entirely rational and fully follows the decision-making process. Observing this aspect, these items primarily belong to the descriptive rather than rational decision-making styles (Bohanec, 2001). The seventh factor is explained with two variables belonging to the intuitive and spontaneous decision-making styles. The projection of both variables in the seventh factor is relatively high ($DMSINT3 = 0.746$ and $DMSSPO = 0.662$) with the factor explaining 5.55% of the total variance (Table 3). The association of these two variables in the same factor is not surprising, as different authors have found statistically significant correlations between the intuitive and spontaneous decision-making styles (Scott & Bruce, 1995; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Wood, 2012; Verma, Rangnekar & Barua, 2012; Cursçu & Schrujjer, 2012; Faletič & Avsec, 2013; Reyna, Ortiz & Revilla, 2014; Hariri, et al., 2014; Bavořar & Orosová 2015; Berisha, et al., 2018; Geisler & Allwood, 2018). Based on this, it can be concluded that both styles have the same cognitive structure in the background, which could be named the intuitive-experiential cognitive style (Sagiv, Amit, Ein-Gar & Arieli, 2013; Alacreu-Crespo, et. al, 2019). As Thunholm (2004) states, the spontaneous decision-making style could also be named the high-speed intuitive style due to the urgency of the decision-making process. As a result, we have named the seventh factor the “*high-speed*” decision-making style. Since the scree plot diagram analysis revealed that it is possible to interpret the factor structure with only five factors (Table 3) and as the sixth and seventh factors are unclear, we further checked how the variables are projected within the five-factor structure of the decision-making styles of sports managers.

Table 5 shows the five-factor structure of the decision-making styles of Slovenian sports managers. The factor structure with a limited number of extracted factors (five) explains 57.87% of the total variance – 8.78% less than the full seven-factor model. This structure is also characterized by higher eigenvalues of all five extracted factors; also, a larger part of the total variance is explained than for the five factors within the seven-factor model (+ 3.30%). Eight items are projected onto the first factor, which explains 15.67% of the total variance. All the items measuring the avoidant decision-making style in the original GDMS inventory are related to this factor (factor loadings 0.489 and 0.832). Furthermore, two variables measuring the spontaneous decision-making style ($DMSSPO4 = 0.541$ and $DMSSPO2 = 0.489$) and a single variable measuring the dependent decision-making style ($DMSDEP5 = 0.658$) are also related to the first factor. In contrast, within the seven-factor solution, the variables $DMSDEP5$ and $DMSSPO4$ were connected to the sixth factor (non-rational style) and the variable

Table 5: Factor structure and factor loadings with a limited number of extracted factors.

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	5
DMSAVO5	0.832				
DMSAVO3	0.808				
DMSAVO2	0.752				
DMSDEP5	0.658				
DMSAVO1	0.619				
DMSSPO4	0.541				
DMSAVO4	0.495				
DMSSPO2	0.489				
DMSRAT3		0.742			
DMSRAT5		0.693			
DMSRAT4		0.678			
DMSRAT1		0.664			
DMSRAT2		0.659			
DMSINT2			0.858		
DMSINT1			0.817		
DMSINT5			0.788		
DMSINT4			0.566		
DMSDEP1				0.793	
DMSDEP2				0.627	
DMSDEP3				0.564	
DMSDEP4			0.503	0.556	
DMSSPO3					0.774
DMSSPO1					0.687
DMSINT3					0.686
DMSSPO5					0.435
Eigenvalues	3.918	3.436	2.762	2.335	2.017
% of Variance	15.672	13.744	11.048	9.339	8.066

DMSSPO2 was connected with the lowest projection to the second factor (avoidant style).

As the first factor includes all five variables measuring the avoidant style (DMSA-VO1 - 5), as well as a variable from a seven-factor model structure with a projection on the avoidant style factor (Table 4) and two variables with a projection on the sixth factor (non-rational style), it can be named the “*avoidant style*”. The second factor is explained with five items measuring the rational decision-making style (DMSRAT1 - 5). The projections of items on this factor are high for all five items (factor loadings from 0.659 to 0.742). The second factor explains 13.74% of the total variance and can be named the “*rational style*”. The third factor is explained with four items measuring the intuitive decision-making style (DMSINT1, 2, 4 and 5). The projections of items on this factor are moderate to very high (factor loadings from 0.566 to 0.858). The third factor explains 11.05% of the total variance and can be named the “*intuitive style*”. The fourth factor is, as in the seven-factor model, explained with four dependent decision-making style variables (DMSDEP1, 2, 3 and 4). Projections of items on this factor are moderate to high (factor loadings from 0.556 to 0.793); the fourth factor explains 9.34% of the total variance and can be named the “*dependent style*”. The fifth factor is a combination of the fifth (spontaneous style) and seventh (high-speed style) factors from the seven-factor model structure. This factor is explained with three variables measuring the spontaneous decision-making style in the original model (DMSSPO1, 3 and 5) and a variable measuring intuitive style (DMSINT3), together explaining 8.07% of the total variance of the studied space. With the exception of the variable DMSSPO5, which has a slightly lower projection on the fifth factor (0.435), other variables have high projections (factor loadings from 0.686 to 0.774). The fifth factor is named the “*spontaneous style*”.

In this way, the developed five-factor decision-making styles structure model forms individual factors or decision-making styles more clearly and, at the same time, establishes the same structure as the original GDMS inventory (Scott & Bruce, 1995), which was confirmed by other authors (Loo, 2000; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Gambetti, et al., 2008; Curşeu & Schruijer, 2012; Avsec, 2012; Erenda, Meško & Bukovec, 2014; Bavořar & Orosová, 2015; Alacreu-Crespo, et. al, 2019). Regardless of the increased clarity of the five-factor structure model, some variables are nevertheless distributed outside the predicted decision-making styles. Some other authors have also faced a similar problem with different samples; they named the variables that were not distributed among the factors in accordance with the intended model as “problematic items”. One such item, which in the resulting five-factor structure (Table 5), was not projected onto the factors in accordance with the original model, is DMSDEP5 (*I like to have someone to steer me in the right direction when I am faced with important decisions*) (Baiocco, Laghi, D’alesio, Gurrieri & Di Chiacchio, 2007; Fischer, Soyez & Gurtner, 2015; del Campo, Pauser, Steiner & Vetschera, 2016). This particular item did not project onto a dependent style factor in either seven-factor or five-factor structure models. Two further variables were also not projected onto a spontaneous style factor in either of the two models; namely, DMSSPO4 (*I often make impulsive decisions*)

and DMSSPO2 (*I often make decisions on the spur of the moment*) (Fischer, et al., 2015). In the continuation of the present study, we designed the “*optimized structure model*” by removing the mentioned variables from the structure of the decision-making styles of Slovenian sports managers. In order to balance the number of items for each decision-making style (four items per style), we also removed the variables that, in the five-factor structure model (Table 5), had the smallest projections on the avoidant style factor (DMSAVO4 - *I generally make important decisions at the last minute*) and the rational style factor (DMSRAT2 - *I make decisions in a logical and systematic way*). Both of these variables have also been characterized as problematic by other authors (Baiocco, et. al, 2007; Fischer, et al., 2015). Based on previous projections of the variable DMSINT3 (*I generally make decisions that feel right to me*) onto the high-speed (Table 4) and spontaneous (Table 5) styles, we assumed that in the continuation of the research, this variable would also have a high projection on the spontaneous decision-making style.

Table 6: Descriptive statistics and internal consistency of the optimized structure model of decision-making styles.

Variable	Possible rang	Actual range	Mean		Standard Deviation	Skewness	Kurtosis	Cronbach α
			Value	% of maximum				
DMS Rational	5–20	12–20	17.03	85.13%	1.736	-0.203	0.630	0.740
DMS Intuitive	5–20	4–18	12.43	62.13%	2.997	-0.591	0.258	0.775
DMS Dependent	5–20	9–20	15.28	76.38%	2.648	-0.087	-0.520	0.705
DMS Avoidant	5–20	4–14	7.18	35.88%	2.540	0.403	-0.706	0.814
DMS Spontaneous	5–20	5–17	12.56	62.81%	2.609	-0.575	0.051	0.609

Table 6 reveals no changes in the order of the average use of individual decision-making styles, between the optimized structural model of the decision-making styles of Slovenian sports managers (20 items; 4 items per decision-making style) and the original GDMS inventory model (25 items, 5 items per decision-making style). The internal consistency, calculated using Cronbach’s alpha coefficient, was 0.637 for

the overall scale and between 0.609 (DMS Spontaneous) and 0.814 (DSM Avoidant) for the five subscales. The reliability coefficients for the intuitive (DMS Intuitive $\alpha = 0.775$), dependent (DMS Dependent $\alpha = 0.705$) and spontaneous (DMS Spontaneous $\alpha = 0.609$) subscales were higher in comparison to the original model, whilst the reliability coefficient was slightly lower for the rational style subscale (DMS Rational $\alpha = 0.740$) and equal for the avoidant decision-making style subscale. The KMO measure of sampling adequacy was 0.646 (the required minimum is above 0.6) and the significance of Bartlett's test of sphericity was 0.000 ($p < 0.01$) (Table 7). The results of both tests show that the studied sample is suitable for performing FA.

Table 7: The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity for the optimized model.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.646
Bartlett's Test of Sphericity	Approx. Chi-Square	592.612
	df	190
	Sig.	0.000

The optimized structure with 20 items of the decision-making styles of Slovenian sports managers was verified by FA using the method of principal components with varimax rotation (Table 8). The FA procedure, based on Kaiser-Guttman's criterion, extracted five (5) factors that cumulatively explained 61.60% of the total variance, which is 3.73% more than in the five-factor structure of the original GDMS Inventory with 25 items (Table 5).

Table 9 shows the factor structure and factor loadings of the 20 items included in the optimized model inventory, obtained by the orthogonal rotation of the factors using the varimax method. Four avoidant style variables (DMSAVO1, 2, 3 and 5) are associated with the first factor (factor loadings from 0.618 to 0.859), together explaining 14.39% of the total variance (Table 8). This first factor can be named the "*avoidant style*". The second factor is explained with four items measuring the intuitive decision-making style (DMSINT1, 2, 4 and 5). The projections of items on this factor are very high for three items (factor loadings from 0.803 to 0.856) and moderate for DMSINT4 (0.569). The second factor explains 13.45% of the total variance and can be named the "*intuitive style*". The third factor is explained with four items measuring the rational decision-making style (DMSRAT1, 3, 4 and 5). The projections of items on this factor are high for all four items (factor loadings from 0.661 to 0.754). The third factor explains 13.29% of the total variance and can be named the "*rational style*". Four variables measuring

Table 8: FA of the optimized structure model inventory with 20 items.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.547	17.735	17.735	3.547	17.735	17.735	2.878	14.388	14.388
2	3.129	15.646	33.380	3.129	15.646	33.380	2.689	13.446	27.834
3	2.785	13.925	47.305	2.785	13.925	47.305	2.658	13.288	41.121
4	1.577	7.887	55.192	1.577	7.887	55.192	2.188	10.942	52.063
5	1.282	6.408	61.600	1.282	6.408	61.600	1.907	9.536	61.600
6	0.984	4.920	66.519						
7	0.882	4.409	70.928						
8	0.809	4.044	74.972						
9	0.798	3.988	78.961						
10	0.658	3.289	82.250						
11	0.624	3.119	85.369						
12	0.580	2.901	88.271						
13	0.509	2.543	90.813						
14	0.374	1.871	92.684						
15	0.326	1.632	94.317						
16	0.307	1.536	95.852						
17	0.261	1.306	97.158						
18	0.238	1.190	98.348						
19	0.208	1.040	99.388						
20	0.122	0.612	100.000						

Table 9: Factor structure and factor loadings of the optimized model inventory with 20 items.

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	5
DMSAVO3	0.859				
DMSAVO5	0.833				
DMSAVO2	0.828				
DMSAVO1	0.618				
DMSINT2		0.856			
DMSINT1		0.811			
DMSINT5		0.803			
DMSINT4		0.569			
DMSRAT3			0.754		
DMSRAT5			0.732		
DMSRAT4			0.716		
DMSRAT1			0.661		
DMSDEP1				0.812	
DMSDEP3				0.635	
DMSDEP2				0.594	
DMSDEP4				0.581	
DMSSPO3					0.790
DMSINT3					0.705
DMSSPO1					0.677
DMSSPO5					0.433

the dependent decision-making style have a projection on the fourth factor. The projections of the variables on this factor range from moderate for the variables DMSDEP4 (0.581), DMSDEP2 (0.594) and DMSDEP3 (0.635) to very high for the variable DMSDEP1 (0.812). The fourth factor explains 10.94% of the total variance and can be named the “*dependent style*”. The fifth factor combines three variables measuring the spontaneous decision-making style (DMSSPO1, 3 and 5) and a variable measuring the intuitive style (DMSINT3); this factor is identical to the fifth factor extracted in a five-factor structure with 25 items (Table 5). With the exception of the variable DMS-SPO5, which has a low but still satisfactory projection onto this factor (0.433), the other variables have high projections (factor loadings from 0.677 to 0.790). The fifth factor explains 9.54% of the total variance.

Table 10: Correlations between the decision-making styles in the optimized structure model inventory with 20 items.

Correlations					
	DMS Rational	DMS Intuitive	DMS Dependent	DMS Avoidant	DMS Spontaneous
DMS Rational	1				
DMS Intuitive	-0.143	1			
DMS Dependent	.348**	0.012	1		
DMS Avoidant	-0.211	0.020	0.175	1	
DMS Spontaneous	-0.087	.278*	-0.036	-0.025	1

Notes: * $p < 0.05$; ** $p < 0.01$.

Table 10 shows the correlations between the extracted factors within the optimized model of the decision-making styles of Slovenian sports managers. Correlation analysis showed that the rational and dependent decision-making styles are statistically significantly related at a 1% risk level. A statistically significant association at a 5% risk level was also found between the intuitive and spontaneous decision-making styles. Similar conclusions were also reached by other authors (Scott & Bruce, 1995; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Baiocco, Laghi & Alessio, 2009; Wood, 2012; Verma, et al., 2012; Curşeu & Schrujjer, 2012; Faletič & Avsec, 2013; Reyna, et al., 2014; Hariri, et al., 2014; Bavoľár & Orosová 2015; Berisha, et al., 2018; Geisler & Allwood, 2018). These findings are consistent with the expectations; namely, both types of connections are characterized by the same cognitive style in the background, defining the manifestation of the aforementioned styles. Thus, the rational and dependent decision-making styles have a background in the rational-analytical cognitive style, while the intuitive

and spontaneous decision-making styles have a background in the intuitive-experiential cognitive style (Sagiv et. al, 2013; Alacreu-Crespo et al., 2019).

DISCUSSION

The decision-making style focuses attention on how an individual obtains, uses and interprets information. Thunholm (2004) defined a decision-making style as a response pattern that an individual shows when faced with a decision problem. This response pattern depends on the decision situation, the decision problem and the decision maker. Faletič and Avsec (2013) stated that although the nature of the problem and the situational factors play an important role in decision-making, we can assume that individuals differ in the frequency of using individual decision-making styles regardless of the decision-making problem. Managers' decision-making styles contribute significantly to their individual performance and thus to the performance of organizations (Abdel-salam, Dawoud & Elkadi, 2013); therefore, as pointed out by Rowe and Boulgarides (1992), they need to be measured, because decision-making styles should form the backbone of effective decision-making.

The present study deals with determining the structure of the decision-making styles of Slovenian sports managers. The GDMS Inventory (Scott & Bruce, 1995) with a five-factor structure was used to measure decision-making styles. After three successive implementations of FA using the method of principal components with the orthogonal rotation of factors using the varimax method, we developed a five-factor model of decision-making styles with 20 items. The results and a comparison of the individual obtained models are presented in Table 11.

Table 11 shows the basic characteristics of all three studied factor models. In all three models, the first five extracted factors form the original structure of the model developed by Scott and Bruce (1995), which was confirmed by the authors earlier mentioned. The developed optimized structure model inventory includes 20 items measuring the avoidant, intuitive, rational, dependent and spontaneous decision-making styles. This model has relatively good internal consistency, both at the level of the entire model and at the level of the individual decision-making styles. Individual factors also explain the variance of the space of decision-making styles in a more balanced way compared to the other two models with 25 items. Another advantage of the developed optimized model is the balanced number of items measuring the individual decision-making styles, allowing us to determine a clearer structure of decision-making styles, both at the level of the individual decision-maker and at the level of the entire sample. In all three factor models, the rational, avoidant and dependent styles showed the greatest stability of the structure of the included items. The stability of the intuitive style was relatively good, while the spontaneous style scale proved to be very unstable and problematic (Fischer et. al, 2015).

Based on the optimized structure model inventory, we calculated the structure of the decision-making styles of Slovenian sports managers (Table 6), confirming that when

Table 11: Basic characteristics of all three factor models of the decision-making style structure of Slovenian sports managers.

Solution	7-factors solution (25 items)				5-factor solution (25 items)				Optimized structure model inventory (20 items)			
	Factor name	No of items	% of variance	α	Factor name	No of items	% of variance	α	Factor name	No of items	% of variance	α
% of variance	66.645%				57.869%				61.600%			
Extracted factors (decision-making styles)	Rational style	5	13.92%	0.777	Avoidant style	8	15.67%	0.828	Avoidant style	4	14.39%	0.814
	Avoidant style	5	13.61%	0.810	Rational style	5	13.74%	0.777	Intuitive style	4	13.45%	0.775
	Intuitive style	3	10.61%	0.824	Intuitive style	4	11.05%	0.775	Rational style	4	13.29%	0.740
	Dependent style	4	8.90%	0.705	Dependent style	4	9.34%	0.705	Dependent style	4	10.94%	0.705
	Spontaneous style	2	7.54%	0.697	Spontaneous style	4	8.07%	0.609	Spontaneous style	4	9.54%	0.609
	Non-rational style	4	6.51%	0.602								
	High speed style	2	5.55%	0.413								

making decisions, sports managers use a combination of all five decision-making styles (Scott & Bruce, 1995; Thunholm, 2004; Avsec, 2012; Faletič & Avsec, 2013). Slovenian sports managers mostly use the rational (Atilgan & Kaplan, 2022) and dependent decision-making styles, indicating that they are mostly rational decision-makers. Rational decision-makers characteristically follow a decision-making process involving the critical evaluation of evidence and a structured process that requires time and conscious effort before making and implementing decisions (Fitzgerald, Mohammed & Kremer, 2017). Rational and intuitive decision-making styles are defined as functional decision-making styles, the use of which leads to various positive outcomes (Faletič & Avsec, 2013; Alacreu-Crespo, et. al, 2019). In contrast to a number of other studies, in our sample, the dependent decision-making style emerged as the second most used style (Spicer & Sadler-Smith, 2005; Curşeu & Schrujier, 2012; Erenda, Meško & Bukovec, 2014; Alacreu-Crespo et al., 2019; El Othman et. al, 2020). The dependent decision-making style has a statistically significant positive correlation with emotional (seeking moral support) and instrumental social support (seeking advice, help and information from others). Connection with both aspects of support indicates that individuals who predominantly use the dependent decision-making style, seek support within their environment for the decision-making processes (Alacreu-Crespo et al., 2019). However, it has to be emphasized that the dependent style is not necessarily dysfunctional, as it also correlates with positive outcomes when it is defined on the basis of behaviour, such as seeking advice and support and not shifting responsibility to others (Faletič & Avsec, 2013; Fischer et. al, 2015). Frequent use of the dependent decision-making style in Slovenian sports managers is probably related to specific characteristics for this type of organization (Young, 1998; Kolar & Jurak, 2014). Sports managers mostly work in interest-type associations, where the interests of various participants and stakeholders (athletes, volunteers, employees, associations, the state, local communities, sponsors, etc.) overlap or are even in conflict. Managers need to constantly coordinate and consider all these interests in the decision-making processes in order to achieve the organization's strategic and operational goals (Parent, 2010). In these organizations, there is also a "unique" governmental-managerial process, led by a committee of elected volunteers (governmental organizational function) who form very sensitive relations with the professional (management) staff (Young, 1998; Kikulis, Slack & Hinings, 1995). When regulating this process, the managers are in a subordinate position, as they are appointed by the governmental function and therefore need to act in accordance with the interests of the government. In order to avoid a conflict between the managerial and governmental structures, the managers depend on the opinions, directions and decisions of the government, otherwise the negative consequences would mostly be reflected on the managers. The structure of decision-making styles also shows that sports managers use an intuitive and spontaneous decision-making style to a lesser extent, which means that they are less likely to make decisions quickly, unconsciously and based on experience (Simon, 1987; Epstein, 1994; Kahneman, 2003; Dane & Pratt, 2007). This is probably also related to the aforementioned specifics of this type of organization. Sports managers use an avoidant decision-making style least often or to a negligible extent, which

is good, because this decision-making style is defined as pathological and dysfunctional and, as such, does not lead to decisions (Mitchell, Shepherd & Sharfman, 2011; Faletič & Avsec, 2013).

Finally, it is necessary to mention the recognized connection between the rational and the dependent styles, which are together also classified as a non-functional decision-making style. Since the structure of the decision-making styles in our sample is dominated by the rational decision-making style, we could conclude that this forms a dependent-rational decision-making style, which can be characterized as functional (Faletič & Avsec, 2013; Fischer et. al, 2015). It is typical for such decision-makers to seek advice, opinions and knowledge from colleagues when making decisions, thus using the dependent style and increasing the rationality of their decisions (Vroom, 2003; Khasawneh, Alomari & Abu-tineh, 2011). Such an understanding is in accordance with the theory of extended rationality (Secchi, 2010), where a decision-maker reduces the influence of the limitations of rationality, which arise from an individual's abilities to acquire and process information (Simon, 1976).

CONCLUSION

The decision-making process of managers has an important impact on the development and growth of sports organizations; therefore, the knowledge of the way managers make decisions is very important. In the present study, we found that the structure of the decision-making styles of Slovenian sports managers is formed as a combination of five decision-making styles, with the rational and dependent decision-making styles being predominant. We can conclude that the recognized average structure of decision-making styles is functional and healthy; furthermore, Slovenian sports managers are, on average, rational decision-makers who, due to the specific organizational characteristics of sports organizations, look for confirmation and opinions on future decisions in the broader environment of the organizations' stakeholders. This study also developed an instrument for measuring the decision-making styles of sports managers, which assumes a five-factor structure of decision-making styles and is consistent with the GDSM Inventory developed and proposed by Scott and Bruce (1995). By using the questionnaire, it is possible to predict the behaviour of individual decision-makers in decision-making situations, which can be an important tool when choosing a manager for an individual sports organization or placing them in the overall organizational structure of a sports organization.

Limitations of the Study

There are some limitations that should be considered for a more valid understanding of the results obtained. The participants completed the questionnaire online and this may have influenced the results. The study could be improved with a larger sample,

which means that we need to be careful when generalizing the results to the entire population of sports managers.

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