

Normative and descriptive perception of strategic decision making

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Abstract. During historical development a greater number of decision theories were gradually conceived. Their differences arise from the normative and descriptive characters of individual theories. They differ in basic assumptions such as rationality, available information or choice of a decision. In practical life, they are manifested by accentuation of rational, or even intuitive decision making. This article is devoted to the definition of both types of theories and subsequent examination of the level of rationality in strategic decision making of managers. The findings have shown, that managers use more rational approach than intuitive approach. The most important factors that influence the level of rationality in strategic decision making were external factors. The most important of them has been assigned to a group of competition factors. Other factors influencing the level of rationality in strategic decision-making have been identified, namely the factors of the decision itself and factors of the internal environment. Managers combine rationality with strategic decision-making activities to take advantage of opportunity of an environment. The emphasis in the degree of impact on rationality in strategic decision-making is significant in favor of using the factors of the decision itself. The dependence of the perception of factors of the decision itself was significant in the variable economy.

1 Introduction

During historical development, a greater number of decision-making theories have been conceived, and they all differ in their understanding of the decision-making process, in different procedures for measuring the usefulness of variants, and in different approaches to rational decision-making. These differences arise from their normative and descriptive character. They differ in such basic assumptions as rationality (perfect or limited) available information (full access or limited access), choice of decision (principle of optimization or principle of satisfaction).

Within the framework of constantly developing opinions on individual theories, our goal is to examine, critically evaluate, and at the same time provide our own views on

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rational-logical (normative) and descriptive areas of decision-making in the current conception, and subsequently verify the acquired knowledge in strategic decision-making in Slovakia.

The normative direction in decision theory focuses on providing guidance on how to solve decision-making problems, what procedures and models to use for each type of decision-making situation in order to achieve the required quality of decision-making processes. According to Bačová [2], normative decision-making models have long been recognized as a measure, criterion, standard against which the degree of “rationality” of individual and group decisions is compared and evaluated. This plays an important role in the eyes of many researchers even nowadays. They are based on the assumptions of rationality, which according to Robins and Coulter [22] are the exactness of the problem, the clarity of objectives and preferences, the knowledge of variants and the stability of preferences.

A rational approach to decision-making is understood by the authors:

- as a sequence of steps to achieve the goal [6, 9, 15], where the difference of authors is in the number of steps leading to rationality.
- as Evidence Based Decision Making, with use of this the authors are arguing, that it is currently important to direct the decision-making process in order to get the most out of the information that is available, thereby ensuring a competitive advantage [4, 7, 19, 21, 23, 24].

The descriptive direction in decision theory tries to clarify how are decisions actually made in real life. Psychology enters economic thinking, and decision-making uses knowledge of behavioral economics [3]. Besides psychology, the role of emotions and affects is one of the areas of research for making decisions. De Martino, Kumaran, Seymour, Dolan [10] emphasize the importance of emotional processes in decision-making models, emotions are considered as states of brain functioning, and represent how the brain can change and influence the effect of impact of deviations on achieving rationality. Many authors are involved in descriptive theories of intuitive decision-making [5,18,20,25].

Rational and descriptive approaches also appear in strategic decision-making. Strategic decision-making deals with poorly structured decision-making problems, where there is no clear procedure for resolving them, which leads to accepting the decision. Therefore, the approaches for strategic decision-making are also highly heterogeneous, and on one hand, they differ in terms of applying the level of rationality and exactness, on the other hand they use the intuition and experience of managers. Elbanna and Child [13] have developed an integrated model of rationality of the strategic decision-making process, which consists of three perspectives affecting rationality - characteristics of the environment, enterprise, and the decision itself. The various factors mentioned by the authors influence to a different extent, whether the manager uses more rational or more intuitive approaches. There is a strong empirical support for the impact of these factors on decision-making. For example, the importance of decision as one of the factors within its specific characteristics significantly influences the way of decision in terms of rationality. Similarly, activities undertaken in strategic decision-making due to environmental threats are more rational, than activities undertaken to exploit its opportunities. Internal factors, e.g. formal structures or centralization of power have a greater impact on the rationality of the process. Of course, there are other opinions, that rationality is limited in the process of strategic decision-making and is limited by the amount of obtained information [8,14,16].

Similarly, according to the above-mentioned authors, this process is not only characterized by analysis, but also by continuous evaluation, intuition and political behavior.

2 Methods

The importance of strategic decision making, which belongs to the competence of top-notch managers, is characterized mainly by a fact, that managers' decisions affect the whole company and all subjects. However, strategic decisions are not taken uniformly. On the one hand, there is a need to apply rationality, which is emphasized in terms of using of rational analysis, exact methods, and procedures. On the other hand, the widespread application of rationality in strategic decision-making is questioned in view of its specificities. Theoretical considerations, as well as practical experience, in issues of rationality level application, are full of controversy when accepting strategic decisions. We were interested in the situation in Slovak companies. The research sample consisted of top 90 managers in the strategic level. Data were collected by a questionnaire. Besides the identification questions, the questionnaire also included questions concerning approaches for strategic decision-making, and factors that influence the degree of rationality in strategic decision-making as well as the context in which strategic decision-making takes place (opportunities - threats). The collected data were analyzed in the Microsoft Excel extended by a package of analytical tools (arithmetic mean, mode, median, minimum value, maximum value, standard deviation, etc.) and in the statistical software IBM SPSS v.23. For data analysis we used methods of descriptive statistics, regression analysis and paired t-test to compare the data. From a set of items, we have created aggregate variables from average values of items in each set. The established hypotheses were tested at the significance scale $\alpha = 0.05$. To verify the hypotheses, we used the following methods - paired t-test of the means of agreement - the significance level was set to 5% bilaterally, the linear regression of the dependent variable in the set of independent explanatory variables - also at the significance level of 5% bilaterally. By paired t-test of average values match, we also determined effect size in order to determine the magnitude of the effect based on the formula:

$$r = \sqrt{\frac{t^2}{t^2 + df}} \tag{17}$$

The first area was focused on the prevailing influence of selected groups of factors on the level of rationality of strategic decision-making. We set out the following hypotheses:

- null hypothesis:

H0: There is no significant difference in the degree of impact on rationality in strategic decision making among the factors of the characteristics of the decision itself and the factors of the internal environment of the company.

- alternative hypothesis:

H1: There is a significant difference in the degree of impact on the rationality of strategic decision making among factors of the characteristics of the decision itself and factors of the internal environment of the company.

The second area was focused on the fact, which factors influence the level of rationality in strategic decision making more significantly – the factors of characteristics of the decision itself or internal business factors and whether there is a dependency of perception of factors of decision itself in the context of rationality impact with respect at

age, education, economic results, and other respondent identification data, what is the connection with other aspects of decision-making as well as other managerial functions. We set out the following hypotheses:

- null hypothesis:

H0: There is no significant difference in degree of impact on rationality in strategic decision making among the factors of the characteristics of the decision itself and the factors of the internal environment of the company.

- alternative hypothesis:

H1: There is a significant difference in the degree of impact on the rationality of strategic decision making among factors of the characteristics of the decision itself and factors of the internal environment of the company.

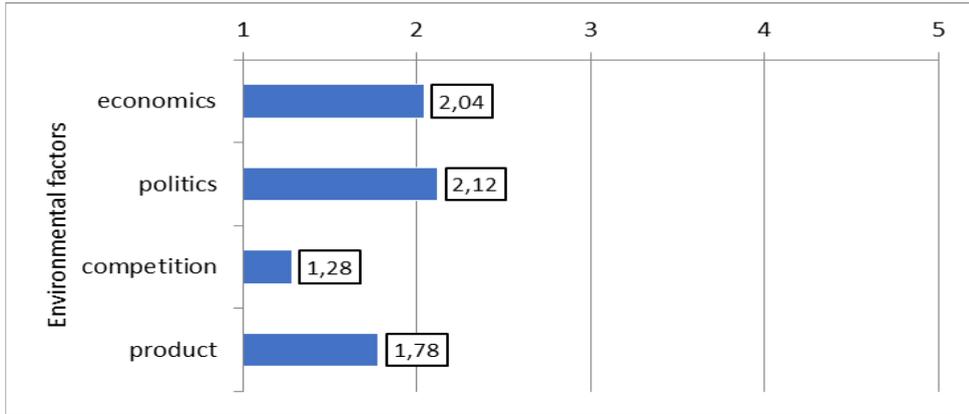
3 Results and Discussion

Managers said, that in strategic decision making they use a more rational approach than intuitive. To our question, in order to identify their approach to strategic decision-making on a scale of 1 to 5, where 1 meant purely rational and 5 meant purely intuitive, they answered an average score of 2,1. In strategic decision making, managers therefore prefer to acquire and analyze relevant information, use analytical techniques and methods in strategic decision making.

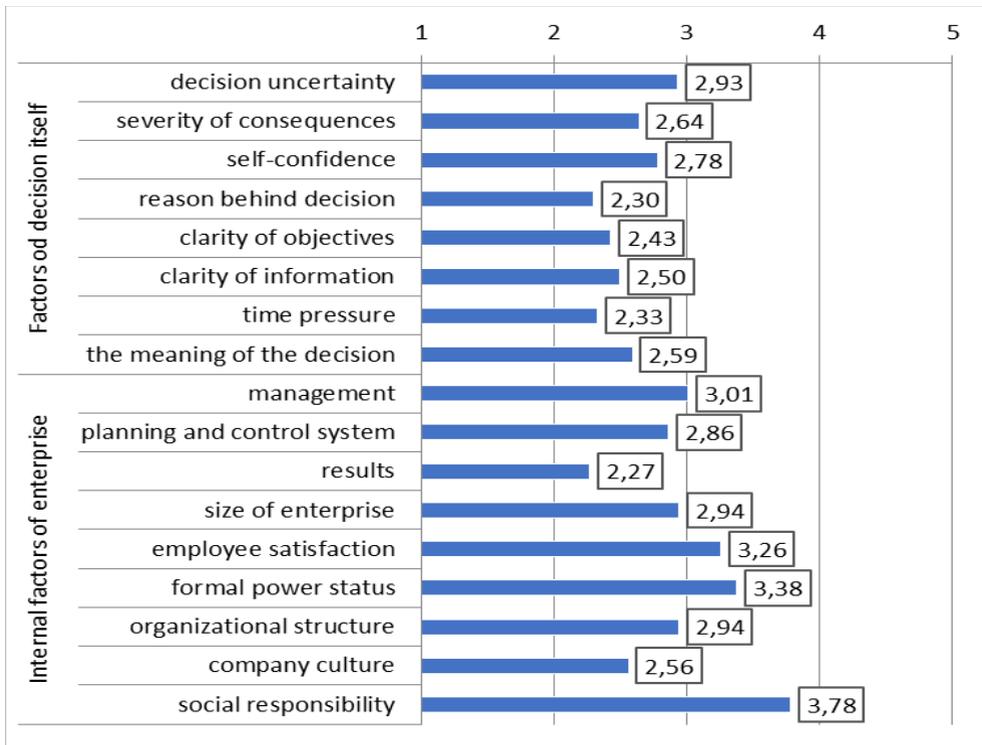
The factors that influence the level of rationality in strategic decision-making were one other field, that we have investigated in our research. Opinions that mainly appear in foreign scholarly literature are contradictory. There are alternating statements about the significant impact of the external environment on the degree of rationality in strategic decision-making, or on the impact of decision-making characteristics. Other authors point to the fact, that the external environment can be controlled only to a limited extent, so they focus their efforts primarily on the control of the internal environment and adapt the decision-making process accordingly.

In our research, we divided the factors into three groups, based on the integration model of the rationality of the strategic decision-making process, that we described in the introduction. The first group consisted of the factors related to the decision itself, such as: importance of decision, time pressure, severity of postponement of the solution, severity of consequences in case of wrong decision, setting parameters for subsequent decisions, uncertainty about activities to be carried out, clarity in the necessary information for the decision, clarity of objectives for participants, adequate freedom of access decision making, initial perception of the problem, motivation to make a decision, and confidence to make the right choice. The second group included factors related to the company - its size, financial and business results, organizational structure, planning and control system, corporate culture, informal power status of individuals and groups, social responsibility, employee satisfaction. The third group consisted of environmental issues - economy: inflation, interest rate, economic growth trends, unemployment rate, tax burden, policy: stability of government, laws, social policy, regulatory measures, competition: changes in prices, markets, strategies, entry of new competitors, product: customer preferences, demand, changes in components, product quality in production process.

Respondents evaluated the importance of each factor within each group of factors on a scale of 1 to 5, where 1 meant a very important factor and 5 meant that the factor was not important at all in the context of its impact on the rationality of decision-making. We calculated the average score of each factor. Graph 1 presents the results for a group of environmental factors. Graph 2 presents the other two groups of factors.



Graph 1 Scores of environmental factors in the surveyed enterprises (1- very important factor and 5 - not important at all)



Graph 2 Score of the factors of the characteristics of the decision itself and the factors of the internal environment of the enterprises in the surveyed enterprises (1- very important factor and 5 - the factor is not at all important)

We assumed that the managers would perceive the environmental factors as a significant factor influencing the level of rationality in strategic decision-making. The most important of them was assigned to a group of competition factors, while others received the same average rating of importance in identifying the degree of impact on rationality. Our results coincide with foreign studies, where the environmental factor was identified as the most significant influence on the level of rationality [1,11,12,13]. However, from our results we have identified other factors influencing the level of rationality in strategic

decision-making, namely the factors of the decision itself and factors of the internal environment of enterprises, in which the results of their impact on rationality were not negligible. We explain this by the fact, that the limited possibilities of controlling political or environmental variables can in some cases cause greater influence of internal factors on the rationality of strategic decision-making.

A fact that we find interesting was that up to 82% of managers associate rationality with strategic decision-making activities to take advantage of opportunities of environment. The remaining 18% decide rationally, because of environmental threats. From a theoretical point of view, hostility and the generosity of the environment significantly influence strategic behavior [2]. Although, little empirical research has been done in this area, the results suggest the importance of these factors. Rational decision-making processes are associated with the performance of organizations in a generous environment. In a hostile environment, organizations are under intense pressure, which is the reason why political tactics are important to secure the current position, increase power, and gain benefits. A team of authors [2] also found that uncertainty/ambiguity of the environment are determinants of rationality according to pivot theory. They state, that synoptic/aggregate processes (e.g. rationality) should be used in a stable environment while incremental / incremental processes (e.g. intuition) should be used in an unstable environment. This is because reliable data is available in a stable environment, there is less pressure to obtain new data and the cost of data collection is reasonable. Fact-based decisions can lead to better performance, than decisions based on hunch or judgment.

Considering the fact, that the two other groups of factors (the decision itself and the internal environment) are not examined in deeper in the context of the impact on the rationality of strategic decision-making, we have focused on this fact in our research. We found out which factors influence the level of rationality in strategic decision making more importantly - factors of the characteristics of the decision itself or internal factors of enterprise, whether there is a dependence of perception of the factors of decision itself in the context of the impact on rationality with respect to age, education, economic outcome and other identification data of the respondents, what is the connection with other aspects of decision-making as well as other managerial functions. We set out the following hypotheses:

- null hypothesis:

H0: There is no significant difference in degree of impact on rationality in strategic decision making among the factors of the characteristics of the decision itself and the factors of the internal environment of the company.

- alternative hypothesis:

H1: There is a significant difference in the degree of impact on the rationality of strategic decision making among the factors of the characteristics of the decision itself and the factors of the internal environment of the company.

Respondents evaluated the importance of each factor within the above two sets of factors on a scale of 1 to 5, where 1 meant a very important factor and 5 meant that the factor was not important at all. We calculated the average score of each factor. The results are presented in graph 2 above.

We statistically verified the hypothesis using the following steps:

We calculated the average score of a set of factors for the characteristics of the decision itself for each respondent. We repeated the same for a set of factors of the internal environment of an enterprise. To compare the overall score of both types of factors, we

used a paired average t-test. The significance level was 5% on both sides. From table 1 is clear, that the score of the factors of the decision itself is lower, which means, that according to respondents, these factors have greater importance. Table 2 points to the fact, that the test is significant ($t = -4.607$ $p = 0.000$) with a median magnitude of effect $r = 0.439$ (formula given in the methodology).

Table 1. Paired Samples Statistics

Impact factors on the level of rationality		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Decision itself_f	2,56	90	0,739	0,078
	Internal_f	3,00	90	0,690	0,073

Table 2. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Conf.Interval of the Difference				
					Lower	Upper			
Pair 1	Decision itself_f Internal_f	-0,435	0,895	0,094	- 0,622	-0,247	-4,607	89	0,000

The completed test denies the null hypothesis, which means that we accept the alternative hypothesis. The emphasis in the degree of impact on rationality in strategic decision-making is significant in favor of the use of the factors of the decision itself.

Subsequently, we examined the dependence of perception of the factors of the decision itself in the context of the impact on rationality with respect to age, education, economic outcome and other respondent identification data. We have worked with the overall score for using these factors, listed above. The overall score of use factor was considered as a dependent variable. Independent variables were years in position, education, legal form, focus of activity, foreign participation, number of employees and economy for the period under review. The significance level of all tests was 5%.

The enterprises did not share their economic outcome with us, but only whether they had made a profit or loss over the last five years. We adjusted the variable economic outcome for the last years before processing into a variable with the name of economy, and we also created 6 categories based on the 5-year result, which are mentioned in table 3.

Table 3. Categories of enterprises by profit or loss

Category	Category content
0	5x loss and 0x profit
1	4x loss and 1x profit
2	3x loss and 2x profit
3	2x loss and 3x profit
4	1x loss and 4x profit
5	0x loss and 5x profit

With the use of mentioned way a new variable came out with a scale of 0-5 from the worst to the best economic result for the whole period. The number of enterprises, in each category, is shown in table 4.

Table 4. Number of enterprises in profit / loss categories

		Frequency	Percent
Valid	0	8	8,9
	1	16	17,8
	2	21	23,3
	3	16	17,8
	4	10	11,1
	5	19	21,1
	Total	90	100,0

The observed dependence of the perception of the factors of the decision itself in the context of the impact on rationality with respect to age, education, economic result and other identification data of respondents is shown in Table 5.

Table 5. Regression ANOVA table - Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	23.450 ^a	10	2,345	9,799	0,000
Intercept	58,960	1	58,960	246,362	0,000
Legal form	0,672	2	0,336	1,405	0,251
Activity focus	0,191	3	0,064	0,2660	0,850
Number of employees	0,121	1	0,121	0,506	0,479
Economy	20,699	1	20,699	86,489	0,000
Years in position	0,115	1	0,115	0,481	0,490
Foreign participation	0,005	1	0,005	0,019	0,891
Education	0,007	1	0,007	0,030	0,862
Error	18,906	79	0,239		
Total	851,679	90			
Corrected Total	42,357	89			

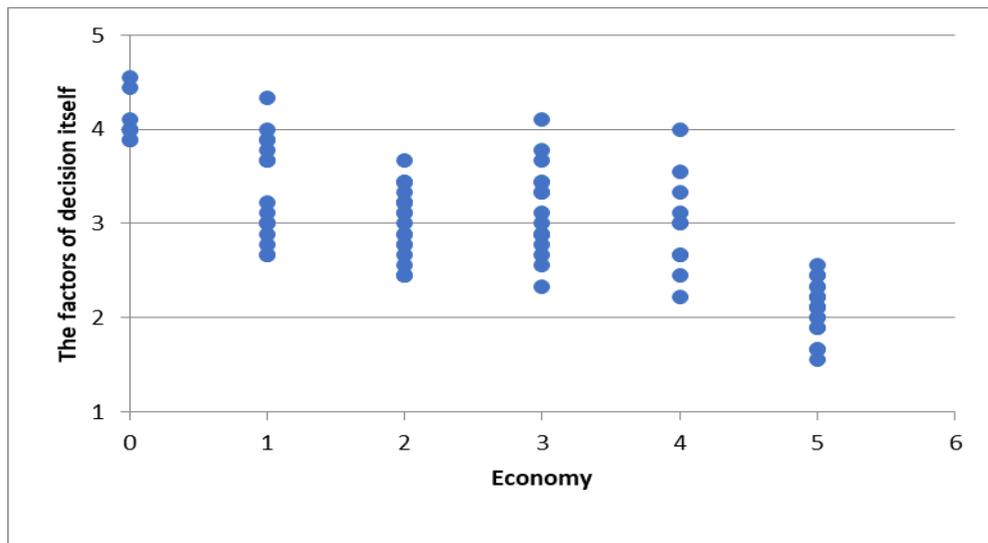
a. R Squared = .554 (Adjusted R Squared = .497)

From Table 5 we can see that the effect on the economy criterion is significant ($F = 86.489$ $p = 0.000$). Other effects are not significant ($p > 0.05$). Table 6 provides estimates for found significant parameter, which is economy (other parameters are insignificant, so we consider them to be zero).

Table 6. Estimates for the significant parameter – economy (Dependent Variable: factors of the decision itself)

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	4,013	0,381	10,523	0,000	3,254	4,772
Economy	-0,323	0,035	-9,300	0,000	-0,392	-0,254

From Table 6 we can see, that the effect acts in a negative direction ($B = -0.323$ $t = -9.3$ $p = 0.000$). From the selected explanatory variables, a significant impact of variable economy was found, which is equal to economic outcome for the period under review ($t = -9.3$ $p = 0.000$). While this dependency has been shown to be negative ($B = -0.323$) – that means that a coding of factor variable of decision itself, that hire efficiency of enterprises is connected with a greater emphasis on factors of decision itself by its impact on rationality of strategic decision making (that means with lower score). The following graph 3 illustrates the result:

**Graph 3** The relationship between the factors of the decision itself and the economic outcome

4 Conclusion

Decision making is a key characteristic of a successful organization and one of the most important roles of a manager. The ability to make the right choices is a complex phenomenon and represents the interplay of rational and intuitive elements, taking place in social groups in the context of social relationships in enterprises. The quality of the decision-making process is conditioned by the normative and descriptive frameworks, which are necessary to interact with a complex and variable external environment. In the article, we presented the results of research on the level of rationality in strategic decision-making. We have found out, that managers use more rational approach than intuitive approach while making strategic decisions. The most important factors, that influence the level of rationality in strategic decision-making were external factors of environment. The most important of these factors was assigned to a group of competition factors. Other factors influencing the level of rationality in strategic decision-making were identified, namely the factors of the decision itself and factors of the internal environment of enterprises. Managers are increasingly connecting rationality with strategic decision-

making activities to take advantage of opportunities of environment. Emphasis on the degree of impact on rationality in strategic decision-making is significant in favor of the use of the factors of the decision itself. The dependence of the perception of the factors of the decision itself in the context of the impact on rationality was statistically significant in the economy variable. Other factors, such as the legal form of the company, focus of activities, number of employees and others did not have a significant impact on the level of rationality in decision making of managers.

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