

# Influence of Students' Value Determinants on the Content of Decisions Made in Conditions of Uncertainty and Risk

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**Abstract:** The problem of decision-making (PR) is one of the most important research topics in both interdisciplinary and general psychological terms. Its relevance is related to the importance of the role that PR processes play in any behavioral act, including in the structure of activities. The solution of complex and diverse tasks related to decision-making is impossible without revealing the psychological characteristics of a person embedded in the patterns of organization and functioning of the psyche. Analyzing the content of the decisions made, you can most clearly and comprehensively trace the specific features perception, interpretation, and processing of information by the subject, which, in turn, depend on his value preferences. When they use the term "decision" (or "decision making"), they mean both the process and the result of choosing a goal and how to achieve it. The decision is a link between the processes of obtaining and processing information (cognition) and a particular variant of human behavior and action. Decision-making itself is certainly a psychological process that involves in developed forms a preliminary awareness of the goal and method of action, working out various options, etc., but it is "located" on the border between internal (mental) and external (subject-activity). In acceptance solutions integrate a person's knowledge, interests, and worldview. The most important feature of this process is its strong-willed nature. Decision-making is not only a specific type of purposeful human activity, but also an attribute of this activity, its structural element, and the value preferences of the individual play an important role in evaluating everything that happens.

**Keywords:** Values, Value Orientations, Decision-making Process, Personality, Uncertainty, Risk

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## 1. Introduction

Decision-making is a key point of the entire functional system, since the final success or failure of adaptation will depend directly on how accurately the choice of the necessary behavioral act is made. The moment of decision-making is accompanied, according to P. K. Anokhin, by the immediate appearance of two interrelated complexes of excitations: a) an adequate program of action, i.e., an integral of efferent excitations; b) a specific apparatus for predicting the results of an action that is not yet completed.

"In any discussion of the concept of "decision-making", one begins with the decision as such, i.e. with the structure of the decision as the corresponding beginning for some activities, etc. But the decision is not the beginning, but the

result of some very subtle and extensive work done by the brain. Therefore, it became necessary to involve in the sphere of attention not only the decision-making itself, but also the stage of "pre-decision", which forms the decision and determines its direction" [1, 2].

In a functional system, decision-making is not an isolated mechanism, an isolated act, but serves as a stage in the development of purposeful behavior. Motivation is a mandatory factor that determines and determines the form of a decision, the type of decision, and its general outlines. Thanks to it, the process of choosing from memory, from past experience, everything that was previously associated with the satisfaction of this motivation begins.

Under any circumstances, the decision-making process involves choosing one act and excluding all other potential

opportunities. The choice of this act is the creation of an efferent integral, in which certain forms of activity of a huge number of individual mechanisms are coordinated, "fitted" to each other. Making a decision translates one system process – afferent synthesis-into another system process — an action program. It is a transitional moment, after which all combinations of excitations acquire an executive character. Thus, making a decision frees the body from an extremely large number of degrees of freedom and leaves one, which is implemented.

Investigating the psychological factors that influence the decision-making process, V. S. Diev notes: "the results of psychological studies of a person's capabilities in performing complex cognitive operations to transform the received information are of fundamental importance, not only in theoretical, applied, but also in methodological terms. It is established that in the real practice of decision-making, people often base their choice on heuristics, emotional preferences, while falling into "traps". As research shows, knowledge of even such disciplines as logic and mathematics is very important. probability theory does not guarantee against certain errors [3].

From our point of view, the identification of these three cases – certainty, risk, and uncertainty-is of great importance. The fact is that decision-making (choice) in conditions of uncertainty is often identified with risk, but at the beginning of the XX century it was shown that it is necessary to separate immeasurable uncertainty and measurable, which should only be called "risk" proper [4]. Since, from our point of view, it is the phenomenon of uncertainty that leads to the strengthening of the role of personal (including value) factors in the decision-making process, we will consider this problem separately.

The goal of our The aim of the research is to study the influence of students' value preferences on the content of their decisions in situations of uncertainty and risk. The objectives of the study were to study the peculiarities of the value structure of students of higher educational institutions.

Identification of the relationship between the features of the students' value structure and the content of their decisions in uncertain situations.

## 2. Literature Review

Decision-making under conditions of uncertainty is characterized by great incompleteness and unreliability of information, diversity and complexity, and the influence of social, economic, political, and technical factors. These circumstances do not allow, at least at the present time, to construct adequate mathematical models for solving problems for determining the optimal solution. Therefore, the search for an optimal or acceptable solution in such situations is very difficult. In general, the problem of decision-making under conditions of uncertainty is more general and includes decision-making as special cases in terms of certainty and probabilistic certainty. In turn, this is due to the fact that the so-called "complete certainty", generally speaking, is a

convention. In fact, there is always one or another measure of uncertainty, and some of it cannot be measured in principle.

The categories of certainty and uncertainty are related to the categories of possibility and reality. The interrelation of these concepts is of great cognitive and practical significance. A person in the course of his activity is forced to eliminate opportunities that are unfavorable for the development of a particular process and turn real desired opportunities into reality. Decision-making under conditions of uncertainty is essentially the choice of a particular possibility from all their diversity, and the decision-making process itself is inextricably linked with the transformation of uncertainty into certainty.

There is a fairly extensive philosophical and general scientific literature on the problem of uncertainty [3, 5, 6], which defines this concept.

The contradiction between the existing and the desired (goal) generates dissatisfaction and takes the form of a problem. In general, the transition of dissatisfaction into a problem means that it becomes necessary to spend resources on building an acceptable program of actions (mental, volitional, physical acts, etc.) that allow you to get closer to the goal. Its actual effectiveness can only be assessed by experience. Note that such parameters as the speed of approaching the goal and the amount of resources spent can be used as the most important factors in evaluating the effectiveness of the program.

Research on decision-making under risk conditions is most common. This is understandable, because in conditions of certainty, the choice is unambiguous, and in conditions of complete uncertainty, rational decision-making becomes problematic. Therefore, most normative and descriptive theories are devoted to the description of risk-based decision-making.

The category of "risk" is the subject of study in many sciences. In the mass consciousness, there is a widespread view of risk as a possible danger or failure. There are disagreements about the scientific definition of risk and how to measure it. Berman G. N., Coombs F. G. [7] define risk as the outcome variance; Kahneman D., Tversky A.-as the mathematical expectation (value) of loss [8]. Risk is also defined as the harm that a given alternative can bring to an individual.

The risk to the decision-maker himself or to other people is related to the danger that may arise as an immanent consequence of this decision. A decision can be dangerous precisely because of intellectual mediation, because it is consciously made, i.e. the level of subjective responsibility for it should be higher than for a rash decision.

Despite the difficulties of defining the concept of risk, most researchers believe that the magnitude of risk is one of the main factors determining decision-making, and it can have a decisive influence on the choice of alternatives. A certain degree of risk is inherent in almost all human activities and is often necessary for survival.

Research methods: theoretical analysis and synthesis of philosophical, psychological and pedagogical literature on

the problem of values; natural pedagogical experiment; pedagogical observation; studying methods for studying the structure of personal values, the author's method of projective type for studying the content of decisions made; methods of mathematical statistics.

### 3. Results

Since different people behave differently in similar situations, we must recognize that everyone objectively perceives the same situation in a characteristic way. Behavior is determined by the situation as it is given to the subject in his experience, as it exists for him. Therefore, to solve the first problem-to determine the specifics of the content of decisions made-we decided to use a technique involving the use of projective tests. Our decision was made for a number of reasons: first, the projective tests allow us to model the components of the activity most correctly; second, the model we are modeling is based on the following criteria: activity objectively involves many situations of uncertainty and, consequently, PR situations; third, the projective method requires less time to collect information. I would like to clarify that the methodology developed for us was only a means of collecting information. Respondents' opinions, understanding and evaluation of various social situations are important for us. We did not set ourselves the task of finding out the reasons for making this or that decision. In the future, based on the data obtained, we intended to analyze the relationship between values and the decision-making process, between personal characteristics and the content of the decisions made. All this makes the choice of this technique most suitable for the purpose that we have in vi-du.

The stimulus material consists of images of situations in which the student is required to make a certain decision (what decision he would make in the place of the character with whom he identifies). The selection of tasks for the projective methodology was carried out in two stages. Initially, about 20 pieces of stimulus material were developed depicting various variants of human interaction. In a small sample of 50 people, the answers were analyzed, and those situations were rejected that, in our opinion, did not contain the effect of uncertainty and pushed the respondent to a certain point to the response. Out of the total number of such situations, we left eight. Thus, in the end, respondents were offered 8 situations that require PR.

By analyzing the available literature on values, we found it possible to combine all available methods into two main types. The first type includes methods that require the respondent to rank or compare values in pairs (M. Rokich, N. I. Lapin, etc.). The second type includes methods of situational tasks. The problem is that respondents do not always openly define values that are important to them, and in real-life situations, their value preferences may change [9].

Since our understanding of the essence of values was based on the conceptual ideas of B. S. Alishev, his methodology was used in the study. In this method, respondents are offered four blocks of values with 7 values in

each block. The first block (basic value relation) includes the following values: preservation of the environment, human life, economic and scientific and technical progress of mankind, cultural and moral progress of mankind, power and prosperity of the Motherland, well-being of loved ones, personal well-being. Second block (primary functions values) form values: utility, truth, beauty, power (power), justice, freedom, goodness. The third block (values – spheres of life) includes: health, family, love, friendship, work, recreation, social life. Finally, the fourth block (values – lifestyle) includes: peace, material well-being, harmony of relationships, status, diversity of life, self-development, dedication [10].

In the method, they are combined in pairs according to the principle - each with each one once inside each block separately. Subjects should indicate what they think is most important in this combination. When summing up the results, the number of selections for each of the values of this block is determined. And the resulting indexes are considered indicators of their priority. This makes it possible to determine for each respondent individually the structure of their value preferences for all four blocks of values.

To solve the third problem of identifying the relationship between the features of the students' value structure and the content of their decisions in uncertain situations, obtained in the course of the study, a comparison was made by overlapping two groups: a) grouping by the content of decisions made and b) grouping by the structure of values. Overlap was performed separately for each situation. Using this comparison, a qualitative analysis of the obtained distributions was performed. The arithmetic mean values in each group were calculated and compared with each other. Difference between arithmetic averages in two groups, it was calculated using the Student's t-test. Thus, we determined what value priorities are typical for respondents assigned to different groups, depending on the type of decisions they make in each specific situation.

### 4. Discussion

For a long time, formalized models of decision-making processes have been developing, based on the use of probability theory, utility theory, statistical decision theory and game theory. Formed normative and descriptive approaches to the formalized description of the decision-making process, within each of which the essence of this phenomenon itself is understood in different ways. The modern stage of research on decision-making processes is characterized by a gradual transition from a purely mathematical description of them (normative or descriptive) to a psychological understanding of this process. Most specialists in this field, both psychologists and representatives of other sciences, recognize that there are fundamental differences in the psychological mechanisms and features of decisions made in conditions of certainty, risk and uncertainty.

To date, there are a fairly large number of theories

describing the decision-making processes of a subject in a risk situation, which in general can be defined as an activity associated with overcoming uncertainty in a situation of choice in the presence of the opportunity to quantitatively or qualitatively assess the probability of achieving the intended result [11-15].

The obtained data suggest that the presence of certain stable psychological properties in a person, as well as the presence of certain value priorities, undoubtedly affects the content of decisions made by him in a variety of situations. But the very set of these specific properties and priorities often turns out to be unpredictable and unobvious. In other words, we must recognize the following: the influence of psychological characteristics and value priorities on the content of decisions is mediated by many other factors and circumstances, including the very specifics of various situations.

The fact is that situations differ from each other in a variety of objective and subjective parameters, including not only the measure of their semantic uncertainty, but also the measure of subjective significance for each individual and the measure of objective variability of possible solutions. Some situations, for example, are so simple that they do not allow for a large variety of solutions at all. As in the binary system of counting, they only have "yes" or "no" options, and people with very different personal characteristics and value priorities choose the same solution. Other situations on their own they allow for a large variability of decisions, and then the role of personal characteristics and value priorities increases markedly.

Based on these considerations, we believe that it is necessary to pay more attention to other results obtained in the study. In particular, in our opinion, one of the most important results is that people who make opposite decisions often differ less from each other both in terms of values and psychological characteristics. The big differences are found between people who either make "intermediate" decisions that lie far from the poles of the main decision continuum, or make decisions that lie completely outside of this continuum. This can be explained by the fact that for many situations, there are standard, "binary" decision models (such as "yes" – "no"). Their choice is often connected, apparently, not so much with values or psychological properties, but with the formed experience, skills and habits. Be that as it may, the study shows that the greatest connection with various properties and values is found in cases of human adoption of "marginal" (different from the usual, most common) decisions.

## 5. Conclusions and Recommendations

Decision making under conditions of a high degree of uncertainty does not obey any of the existing mathematical models. The reason for this is that it cannot be described in terms of formal (and mathematical) logic, i.e. does not obey the rules of scientific rationality. Thus, in this case, only various psychological concepts are

possible, taking into account the fact of irrationality, impulsivity, subjectivity and partiality of the person making the decision.

So, the analysis of the value structures of students making various decisions in the situations we have selected has shown that in each case a certain specificity is revealed. That is, individual features of a person's value priorities affect the decisions he makes. At the same time, we are forced to note the following.

First, the differences in value priorities among students inclined to different decisions in the same situations are most often small (they are found only for individual values). Secondly, some of the found value differences are difficult to interpret unambiguously. Thirdly, it is not possible to single out solutions of the same type (in terms of the characteristics of the structure of students' value priorities) solutions in different situations. In the latter case, we mean that the solution options are not interrelated: students who adhere to a solution in one situation do not choose the same solution in other situations.

Thus, decisions made by students depend on their values, but in fact there are no unambiguous and rigid connections. This means that there are other factors (besides value priorities) that affect the content of decisions. One of these factors, of course, are the situations themselves, or rather their perception, interpretation and assessment by a person. Another important factor may be the stable psychological properties of the personality. We will turn to the consideration of their role in the next section.

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