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Individual personal determinants of coping strategies in decision-making under uncertainty

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Abstract

Introduction. The relevance of this research is driven by society's need to cultivate and develop psychologically resilient individuals capable of effective performance under conditions of uncertainty. The issue of decision-making remains insufficiently studied from the perspective of individual personal characteristics that contribute to the choice of action strategies in uncertain situations. The aim of this experimental study is to identify the individual personal determinants of coping strategies among managers when making decisions under uncertainty.

Methods. The sample consisted of heads of structural divisions in construction companies in Krasnodar (n=59). The following instruments were employed: the Melbourne decision making questionnaire (L. Mann; adapted by T. V. Kornilova), "Who am I in this world" (V. A. Sonin), "Personal factors of decision-making (LFR-25)" (T. V. Kornilova), Rotter's locus of control scale (J. Rotter), and the Eysenck personality inventory for self-assessment of mental states (H. J. Eysenck). Data analysis was conducted using methods of mathematical statistics (SPSS 27.0), including mean analysis, hierarchical cluster analysis, and Student's t-test for independent samples. **Results.** Using hierarchical cluster analysis, four main clusters of respondents were identified based on similarity of characteristics: «externals», «rational-vigilant», «emotional-vigilant», and «internals». With an increase in internal locus of control and self-esteem, managers exhibit lower levels of anxiety and frustration when making decisions in uncertain situations and are less inclined to employ coping strategies (avoidance, hypervigilance, procrastination). For managers with an external locus of control, a tendency toward low self-esteem, and pronounced anxiety and frustration, variability in

coping strategies is characteristic: depending on the circumstances, they may resort to either rational analysis (vigilance) or defensive, irrational strategies (avoidance, procrastination, hypervigilance), which is determined by their personal characteristics and emotional state at the time of use. **Discussion.** The results of this study revealed that the determinants of coping strategies in decision-making under conditions of uncertainty among young managers include the level of self-esteem, the direction of locus of control, and emotional states such as anxiety and frustration.

Keywords

Individual personal determinants, coping strategies, decision-making, uncertainty, locus of control, self-esteem level, mental states, personal factors

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Introduction

The contemporary socioeconomic reality is characterized by a high degree of uncertainty, which makes the ability of an individual to make effective decisions crucial at both the individual and organizational levels. In psychology, the concept of uncertainty is traditionally associated with situations of multiple choice, the absence of unambiguous algorithms for action, and the unpredictability of outcomes, which generates a state of cognitive and emotional tension in the individual (Godunov, Abakumova, Golubova, 2019). Following C. E. Shannon and W. Weaver (Shannon & Weaver, 1949), many researchers emphasize that uncertainty increases with the number of alternatives presented to the subject (Marroquín, Tennen & Stanton, 2017). Thus, the issue of decision-making is inextricably linked to the phenomenon of uncertainty, which acts not merely as an external background but as an inherent attribute of cognitive activity.

Several theoretical approaches to the study of decision-making have emerged in psychology, which can be compared based on the «role of personality versus role of rational calculation». The early, cognitively oriented approach, originating from the work of O. K. Tikhomirov (Tikhomirov, 1969) and developed in the studies of G. N. Solntseva (Solntseva, Smolyan, 2009), focused on the quantitative analysis of outcomes and probabilities. Within this tradition, decision-making was viewed primarily as a rational, algorithmizable act, while personal variables were treated largely as «interference» or unaccounted factors. In its most general interpretation, decision-making is defined as the selection of alternatives made by an individual or a group under conditions of uncertainty.

In contrast to this tradition, the subject-volitional approach, represented by S. L. Rubinstein (Rubinstein, 1999), emphasizes a fundamentally different aspect of the process. For Rubinstein, decision-making can occur in various ways: without hesitation (in the absence of volitional effort), as a purely intellectual act of decision-making, or with agonizing deliberation (involving both intellectual and volitional effort). Whereas in the cognitive approach the individual is «bracketed out», in the Rubinstein tradition, the individual is, on the contrary, placed at the very center of the choice process. This creates a theoretical tension: a decision is simultaneously a rational search for the best alternative and an existential act of self-determination.

An attempt to overcome this contradiction is represented by the integrative approach of T. V. Kornilova, who defines decision-making as a choice under conditions of uncertainty, emphasizing precisely those processes of personal self-regulation that serve as integrative variables around which measurable personality variables cluster (Kornilova, 2003). In this model, conceptions of rational goal-setting and personal regulation of choice are organically combined. This approach appears to us to be the most productive theoretical framework for studying real-world decisions made by managers, as it allows for maintaining a focus on both the objective characteristics of the situation and the subjective, personal variables. According to T. V. Kornilova, uncertainty is accounted for as a new methodological principle and a key element of science that guides psychological theories of thinking, consciousness, and personal self-regulation (Kornilova, 2003).

Foreign researchers, in turn, shift the focus to the qualitative content of uncertainty, examining how individual differences (e.g., value orientations or tolerance for uncertainty) mediate the choice process (Arieli, Sagiv & Roccas, 2020; Ceschi et al., 2019), which is substantively close to the integrative line of T. V. Kornilova and enriches it with empirical data on the role of personal dispositions.

The decision-making process can be viewed as a key component of any mental process, as well as of activity and behavior in general, because the subject is constantly faced with the task of choosing among a number of alternatives. The problem of decision-making under uncertainty is most acute for managers, whose professional activity is inherently associated with making managerial decisions under conditions of risk and time pressure. This is due to sociopolitical, administrative-legislative, operational, commercial, financial, and other factors. In management theory and practice, there is a need for accurate descriptions of the choice process-decision-making under conditions of bounded rationality. As S. V. Eremin and colleagues note (Eremin & Savonenko, 2021), constraints are primarily determined by the cognitive capabilities of the manager, specifically their perception, attention, and intellectual abilities. Therefore, in real-world practice, the management system requires coverage of the entire decision-making process as a whole and its individual stages with the necessary precision and depth.

As T. Y. Bazarov and E. D. Vashurina note, the specificity of modern management requires a manager not merely to analyze information but also to be prepared to act in a fundamentally

unpredictable environment (Vashurina, Bazarov, 2020). In this situation, coping strategies become the key regulatory mechanism-these are the conscious, purposeful actions or methods that an individual uses to manage stress or a difficult situation. Coping encompasses behavioral, cognitive, and emotional approaches aimed at solving the problem or reducing its impact on the individual. Here we again encounter the distinction between productive and unproductive patterns, which requires theoretical substantiation.

R. Lazarus and his colleague S. Folkman developed the first classification of coping strategies, identifying two main approaches: problem-focused coping and emotion-focused coping. Most subsequent classifications of coping strategies that appeared after the work of Lazarus and Folkman retained this division, defining the approaches as «working with the problem» and «working with the perception of the problem» (Lazarus & Folkman, 1984). With regard to the decision-making process, L. Mann's model identifies coping strategies such as vigilance (productive, rational analysis), as well as avoidance, procrastination, and hypervigilance (unproductive patterns leading to decision avoidance or hasty, ill-considered choices) (Mann, Burnett & Radford, 1997). The choice of Mann's typology as the theoretical framework is due to the fact that it directly describes coping strategies in the context of decision-making rather than in general life situations, which is maximally relevant to the objectives of our study. Noting the applied usefulness and productivity of the concept of coping, A. N. Demin emphasizes that coping behavior is typically situational; its scope is narrower than the life path. This is precisely why, during difficult periods of life, the subjective maturity of the individual-particularly the development of such subjective characteristics as activity and self-organization becomes especially significant for overcoming crises (Demin, 2004).

Personality psychology possesses an extensive body of knowledge regarding the influence of individual characteristics on decision-making processes. According to research by D. A. Leontiev, the effectiveness of choice depends on the level of autonomy and psychological maturity of the individual (Leontiev, 2018). Scholarly works confirm the influence of factors such as locus of control, self-esteem, and emotional reactions (e.g., anxiety and feelings of dissatisfaction) on decisions (Mironenko, 2015; Stanibula, 2018; Godunov, Akhmedova, Portnov, 2024).

Despite intensive study of the relationship between personality traits and attitudes toward uncertainty in foreign research (Dreves & Blackhart, 2019; Berzonsky & Ferrari, 1996), Russian psychology lacks empirical data that provide a detailed account of how the combination of self-esteem, type of locus of control, and emotional states determines the preference for specific coping strategies when making managerial decisions.

A review of foreign research reveals a theoretical shift from understanding uncertainty as an objective characteristic of a situation (Shannon & Weaver, 1949; Thomas, K. W. & Kilmann, R. H., 2007) to analyzing the subjective experience of uncertainty mediated by personal dispositions – value orientations, tolerance for uncertainty, and time perspective (Baroncelli, S. et al., 2024; Eager, B. et al., 2019; Shiffrin, R. M., 2022). This position substantively aligns with the integrative approach of T. V. Kornilova (Kornilova, 2003), which views decision-making as a personally mediated process.

At the same time, the majority of foreign publications are predominantly focused on studying the influence of individual psychological properties on behavioral choice in the general population, largely ignoring a comprehensive analysis of the interaction among self-esteem, type of control over circumstances, anxiety, and frustration in relation to the selection of specific coping mechanisms among managers (Li et al., 2024; Fischer et al., 2021). Thus, the aim of our research is as follows: using L. Mann's classification (Mann, Burnett & Radford, 1997) and the concept of choice self-regulation, to experimentally establish stable combinations of personal characteristics that determine effective or ineffective decision-making strategies in the field of management.

Currently, the issue of decision-making remains insufficiently studied from the perspective of the individual personal determinants that contribute to the choice of action strategies under conditions of uncertainty. In our view, this is hindered by two aspects: first, a lack of clear typologies of leaders based on stable combinations of the aforementioned factors, and second, a lack of clarity regarding which specific personal characteristics lead to the predominance of effective coping responses and which provoke the use of counterproductive approaches (such as avoidance, procrastination, or hypervigilance).

A limitation of previous research is the fact that, in most cases, only the isolated effects of specific personality traits are examined, while the mechanisms of the combined influence of these characteristics on the preference for particular coping strategies remain unexplored. There are no reliable empirical classifications that integrate different levels of personality properties, which hinders the prediction of managers' choices of effective or ineffective methods of responding to uncertainty in the management process.

The scientific novelty of this study lies in the fact that, for the first time using a sample of Russian managers (in the construction industry as an example), an attempt is made not merely to establish correlational relationships between individual personality characteristics and coping strategies, but to construct an empirical typology that integrates these variables. This will allow a transition from describing isolated influences to a holistic understanding of the personality syndromes that determine specific patterns of coping with uncertainty in the decision-making process.

The practical significance of this work lies in the possibility of applying the obtained findings in personnel selection procedures, evaluation, and further development of managerial competencies. The identified types of personality profiles prone to choosing ineffective forms of adaptation (avoidance, procrastination, hypervigilance) enable the creation of specialized programs for psychological and counseling support, enhancing stress tolerance, and developing effective decision-making abilities among managers operating in situations of heightened uncertainty.

Thus, a contradiction arises between the acknowledged theoretical and practical significance of personality factors in regulating the decision-making process and the insufficient empirical investigation of their role as determinants of specific coping strategies among managers operating under uncertainty. This contradiction defines the aim of this study:

to identify the individual personal determinants of coping strategies among managers when making decisions under uncertainty. The research hypothesis is the assumption that these determinants include the level of self-esteem, anxiety, and frustration, as well as the direction of locus of control, with their various combinations forming stable types characterized by a preference for specific coping strategies (research hypothesis).

Methods

The study involved 59 heads of structural divisions from several construction companies. Of these, 39 were male managers (66% of the total number of respondents) and 20 were female managers (34% of respondents). The age of the respondents was 32.5 ± 1.47 years (M±SD), ranging from 30 to 35 years. All respondents have higher specialized education, with an average of 10 years of work experience in the construction industry and 3 to 5 years of experience in managerial positions.

To address the research objectives, the following empirical data collection methods were employed: the Melbourne Decision Making Questionnaire by L. Mann (1997) as adapted by T. V. Kornilova, M. A. Chumakova, and S. A. Kornilov (2010); the Personal Factors of Decision-Making (LFR-25) scale by T. V. Kornilova (2003); Rotter's Locus of Control Scale by J. Rotter (1966) as adapted by V. A. Sonin (2022); and the Eysenck Personality Inventory for Self-Assessment of Mental States by H. J. Eysenck (1975) as adapted by A. I. Krupnova (1990). To study the content-related aspects of self-awareness underlying the subjective significance of decisions made, the projective technique "Who Am I in This World" by V. A. Sonin (2001) was used. This method was selected due to the need to examine the content-related aspects of self-awareness and life-meaning orientations, in contrast to standardized scales that capture only the quantitative level of self-esteem. This aligns with the theoretical framework of the study on personal regulation of decision-making.

Data collection was conducted using the Google Forms platform. For data analysis, methods of mathematical and statistical analysis available in the IBM SPSS 27.0 software package were employed. Statistical processing methods included mean analysis, hierarchical cluster analysis, and Student's t-test for independent samples, used to identify statistically significant differences in individual personal characteristics between clusters.

Results

Using hierarchical cluster analysis, four main clusters of respondents were identified based on similarity of characteristics. The clusters were formed according to the individual personal characteristics and coping strategies under study. The first cluster comprises 15% of respondents (9 individuals) of the total number surveyed, the second–31% (18 individuals), the third–19% (11 individuals), and the fourth–35% (21 individuals).

Let us examine the content-related features of the individual psychological characteristics of respondents in the identified clusters.

In the group of respondents in Cluster 1 (n=9), external locus of control (M=14.0, SD=2.1) dominates over internal locus of control (M=9.0, SD=1.8), which exceeds the normative values for externality (norm 10–12). Respondents exhibited elevated levels of anxiety (M=14.6, SD=2.3) and frustration (M=13.7, SD=2.1), corresponding to a high level on the Eysenck scale (above 15–high, 8–14–average; actual values approach the upper boundary of average/high). In terms of coping strategies in decision-making, respondents demonstrate high or above-average values on all scales of the questionnaire: avoidance (M=14.1, SD=2.2), procrastination (M=12.7, SD=1.9), and hypervigilance (M=12.8, SD=1.8) exceed the normative values (norm 8–12); vigilance (M=16.2, SD=1.9) is above average (norm 14–18), indicating the prominence of unproductive strategies. Respondents are characterized by an elevated level of rationality (M=7.4, SD=1.1) with a norm of 4–6, while self-esteem in this group of managers tends to be low (M=40.3, SD=3.8) with a norm of 45–55 points.

When analyzing the individual personal characteristics of respondents in Cluster 2 (n=18), average values of externality (M=11.5, SD=1.6) and internality (M=11.4, SD=1.7) should be noted, which correspond to normative values (10–12). This ratio describes respondents as individuals who assess various events adequately and understand that not only internal factors (skills, confidence, etc.) but also external circumstances play a significant role in the decision-making process. At the same time, they exhibit low levels of anxiety (M=5.4, SD=1.8) and frustration (M=3.9, SD=1.5), corresponding to a low level on the Eysenck scale (0–7), as well as an adequate level of self-esteem (M=45.0, SD=2.9) within the normal range (45–55). In terms of coping strategies in decision-making, respondents predominantly employ vigilance (M=15.1, SD=1.7)–at an average/above-average level–with low values for avoidance (M=9.9, SD=1.6), procrastination (M=7.7, SD=1.4), and hypervigilance (M=7.6, SD=1.3), which correspond to normative or reduced values. Consequently, managers with an average level of locus of control and adequate self-esteem choose the most productive decision-making strategies in uncertain situations.

In Cluster 3 (n=11), as in Cluster 2, average values of externality (M=11.3, SD=1.5) and internality (M=11.6, SD=1.6) were identified within the normal range. Managers in this cluster, when making decisions, equally consider the influence of both external circumstances and their own abilities and skills on the outcome. At the same time, they exhibit pronounced vigilance as the predominant coping strategy—vigilance (M=16.2, SD=1.8) at a high level–with low values for avoidance (M=8.6, SD=1.5), procrastination (M=8.5, SD=1.4), and hypervigilance (M=8.4, SD=1.4), which correspond to the lower boundary of average/norm. Respondents in Cluster 3 are characterized by adequate self-esteem (M=45.5, SD=3.1), though with a tendency toward being somewhat inflated (within the upper boundary of the norm). The levels of anxiety (M=11.0, SD=2.0), frustration (M=9.5, SD=1.9), aggressiveness (M=14.5, SD=2.4), and rigidity (M=13.4, SD=2.1) correspond to average values (8–14), with aggressiveness and rigidity scores approaching the upper boundary of the average range. Thus, this group of respondents is characterized by a productive coping strategy in decision-making (vigilance), despite the presence of moderate emotional reactions (anxiety, frustration).

In the group of respondents in Cluster 4 (n=21), internal locus of control is pronounced (internality M=14.5, SD=1.9; externality M=8.5, SD=1.7), which significantly exceeds the

normative values for internality (norm 10–12). Respondents tend to take responsibility for the outcomes of their achievements and the consequences of personal choices; they are not inclined to rely on external circumstances or other people in the decision-making process. Anxiety (M=7.6, SD=1.8) and frustration (M=5.1, SD=1.6) are at low levels (0–7). In decision-making coping, vigilance predominates (M=15.7, SD=1.8)—an above-average level—with moderate values for avoidance (M=11.1, SD=1.9), procrastination (M=8.9, SD=1.5), and hypervigilance (M=9.1, SD=1.5), corresponding to average values, while their self-esteem tends to be somewhat inflated (M=47.4, SD=3.2) within the upper boundary of the norm.

Based on the obtained data (Table 1), it can be concluded that as the level of self-esteem increases, the level of internal locus of control also increases, while the coping strategy of vigilance in decision-making under uncertain situations begins to occupy a more significant role. Respondents with lower levels of self-esteem and internal locus of control, accompanied by pronounced anxiety and frustration, exhibit all coping strategies; such managers may choose either rational or irrational strategies characterized by decision-making avoidance, procrastination, or hypervigilance depending on the circumstances.

Table 1

Mean Values of Individual Personal Characteristics and Decision-Making Coping Strategies Across All Clusters

	Mean values			
	1 cluster (9 people)	2 cluster (18 people)	3 cluster (11 people)	4 cluster (21 people)
Risk readiness	1,6	2,6	4,5	1,9
Rationality	**7,4**	**4,9**	**4,9**	**6,6**
Externality	**14**	**11,5**	**11,3**	**8,5**
Internality	**9**	**11,4**	**11,6**	**14,5**
Anxiety	**14,6**	**5,4**	**11**	**7,6**
Frustration	**13,7**	**3,9**	**9,5**	**5,1**
Aggressiveness	9,2	8,2	14,5	7,3
Rigidity	12,2	7,3	13,4	8,4
Vigilance	**16,2**	**15,1**	**16,2**	**15,7**
Avoidance	**14,1**	**9,9**	**8,6**	**11,1**
Procrastination	**12,7**	**7,7**	**8,5**	**8,9**

	Mean values			
	1 cluster (9 people)	2 cluster (18 people)	3 cluster (11 people)	4 cluster (21 people)
Hypervigilance	**12,8**	**7,6**	**8,4**	**9,1**
Self-esteem	**40,3**	**45**	**45,5**	**47,4**

Note: *the value of the characteristic tends to be inflated; the value tends to be understated; increase or decrease in the value of a characteristic from Cluster 1 to Cluster 4.*

Using Student's t-test, the following statistically significant differences between the scales in the identified clusters were identified (Table 2).

Table 2

Statistically Significant Differences in Individual Personal Characteristics of Respondents Across Clusters

	1 and 2 clusters	2 and 3 clusters	2 and 4 clusters	1 and 3 clusters	3 and 4 clusters	1 and 4 clusters
Risk readiness	2,3 (p<0,05)	-	-	5,2 (p<0,001)	-	2,5 p<0,05)
Externality	-	-	2,9 (p<0,01)	-	3,2 (p<0,01)	4,5 (p<0,001)
Internality	-	-	2,9 (p<0,01)	-	3,2 (p<0,01)	4,5 (p<0,001)
Anxiety	5,8 (p<0,001)	4,6 (p<0,001)	2,6 (p<0,05)	2,1 (p<0,05)	3,2 (p<0,01)	4,7 (p<0,001)
Frustration	4,5 (p<0,001)	4,1 (p<0,001)	-	-	3,7 (p<0,001)	4,2 (p<0,001)

	1 and 2 clusters	2 and 3 clusters	2 and 4 clusters	1 and 3 clusters	3 and 4 clusters	1 and 4 clusters
Aggressiveness	-	5,5 (p<0,001)	-	3,1 (p<0,01)	8,8 (p<0,001)	-
Rigidity	4,9 (p<0,001)	6 (p<0,001)	-		4,9 (p<0,001)	3,6 (p<0,01)
Avoidance	4,3 (p<0,001)	-	-	5,9 (p<0,001)	3,6 (p<0,01)	4,3 (p<0,001)
Procrasti-nation	5,3 (p<0,001)	-	-	4,3 (p<0,001	-	3,4 (p<0,01)
Hypervigilance	7,8 (p<0,001)	-	2,4 (p<0,05)	5,4 (p<0,001)	-	3,9 (p<0,001)
Self-esteem	2,9 (p<0,01)	-	-	2,6 (p<0,05)	-	4,8 (p<0,001)

Note: *Value – α, (p)*

Let us examine the statistically significant differences according to Student's t-test between Clusters 1 and 2 (in accordance with Table 2). Statistically significant differences were identified on the scale of readiness for risk ($\alpha = 2.3$, $p < 0.05$), anxiety ($\alpha = 5.8$, $p < 0.001$), and frustration ($\alpha = 4.5$, $p < 0.001$). Based on this, it can be concluded that in the clusters under consideration, respondents exhibit emotional reactions in the decision-making process with varying degrees of intensity and directionality. Respondents in Cluster 1, «Externals», demonstrate high levels of anxiety (M = 14.6) and frustration (M = 13.7), indicating pronounced emotional tension, uncertainty, and the experience of difficulties in uncertain situations. Their readiness for risk is low (M = 1.6), suggesting avoidance of risky decisions due to fear of failure and a desire to maintain stability. Respondents in Cluster 2, «Rational-Vigilant», are characterized by low levels of anxiety (M = 5.4) and frustration (M = 3.9), indicating emotional stability, self-confidence, and the ability to maintain composure in difficult situations. Their readiness for risk is somewhat higher (M = 2.6), though remaining within moderate values. In terms of self-esteem level, a strong statistical significance of differences ($\alpha = 2.9$, $p < 0.01$)

was found between respondents in Clusters 1 and 2. Additionally, a high level of statistical significance was observed on the decision-making style scales: procrastination ($\alpha = 5.3$, $p < 0.001$), avoidance ($\alpha = 4.3$, $p < 0.001$), and hypervigilance ($\alpha = 7.8$, $p < 0.001$). Accordingly, managers with different levels of self-esteem exhibit different decision-making strategies.

Significant statistical differences between Clusters 2 and 3 were identified on the following scales: anxiety ($\alpha = 4.6$, $p < 0.001$), frustration ($\alpha = 4.1$, $p < 0.001$), and rigidity ($\alpha = 6.0$, $p < 0.001$). Accordingly, respondents in these groups do not differ in terms of decision-making coping strategies but do differ in emotional reactions in situations of uncertainty.

Significant differences between respondents in Clusters 2 and 4 were identified on locus of control: externality ($\alpha = 2.9$, $p < 0.01$), internality ($\alpha = 2.9$, $p < 0.01$), and on the hypervigilance scale ($\alpha = 2.4$, $p < 0.05$). Based on this, it can be concluded that managers in the groups under consideration differ in the direction of locus of control and, consequently, exhibit different emotional reactions in the decision-making process (including significant differences on the anxiety scale, $\alpha = 2.6$, $p < 0.05$).

Statistically significant differences were identified between Clusters 1 and 3 on the following scales: readiness for risk ($\alpha = 5.2$, $p < 0.001$), anxiety ($\alpha = 2.1$, $p < 0.05$), avoidance ($\alpha = 5.9$, $p < 0.001$), procrastination ($\alpha = 4.3$, $p < 0.001$), hypervigilance ($\alpha = 5.4$, $p < 0.001$), and self-esteem ($\alpha = 2.6$, $p < 0.05$). Consequently, when making decisions in uncertain situations, respondents with more stable self-esteem are willing to take risks and are flexible, whereas respondents with a tendency toward low self-esteem predominantly exhibit defense mechanisms in the form of evading responsibility in the decision-making process or postponing the implementation of choice and decision-making.

Next, we analyze the differences between respondents from Clusters 3 and 4. Significant differences were identified in locus of control (externality: $\alpha = 3.2$, $p < 0.01$; internality: $\alpha = 3.2$, $p < 0.01$), anxiety ($\alpha = 3.2$, $p < 0.01$), frustration ($\alpha = 3.7$, $p < 0.001$), rigidity ($\alpha = 4.9$, $p < 0.001$), and avoidance ($\alpha = 3.6$, $p < 0.01$). Notably, no significant differences were found in self-esteem levels. Accordingly, respondents in these two groups differ in the direction of locus of control. In respondents with external locus of control, the decision-making process may exhibit avoidance strategies and a slowing of the decision implementation process, as evidenced by the strong statistical significance on the rigidity scale. Additionally, states of frustration and anxiety may contribute to the rejection of reasoned risk in favor of more conservative and safe decisions.

It should be noted that respondents in Cluster 3 demonstrated significant differences on the aggressiveness scale compared to respondents in Cluster 1 ($\alpha = 3.1$, $p < 0.001$), Cluster 2 ($\alpha = 5.5$, $p < 0.001$), and Cluster 4 ($\alpha = 8.8$, $p < 0.001$). These identified significant differences confirm that respondents in Cluster 3 differ in emotional states—which may influence the use of coping strategies in decision-making—from respondents in other clusters.

Let us examine the significant differences between Clusters 1 and 4 (in accordance with Table 2). Significant differences were identified in self-esteem level ($\alpha = 4.8$, $p < 0.001$), in locus of control—externality ($\alpha = 4.5$, $p < 0.001$), internality ($\alpha = 4.5$, $p < 0.001$)—and on the

following scales: anxiety ($\alpha = 4.7$, $p < 0.001$), frustration ($\alpha = 4.2$, $p < 0.001$), rigidity ($\alpha = 3.6$, $p < 0.01$), avoidance ($\alpha = 4.3$, $p < 0.001$), procrastination ($\alpha = 3.4$, $p < 0.01$), and hypervigilance ($\alpha = 3.9$, $p < 0.001$).

The results of correlation analysis confirm the theoretical propositions that locus of control influences the choice of coping strategies through mechanisms of self-esteem and emotional regulation. In the work of V. V. Abramov (2014), locus of control is regarded as a crucial coping resource of the individual, alongside hardiness and volitional subjective control. The author emphasizes that it is internality that enables a person to mobilize internal resources for active coping with difficulties, whereas externality is associated with passive strategies and an expectation of help from outside.

Discussion

Based on the obtained data, it was revealed that the determinants of coping strategies in decision-making under uncertainty among young managers include the level of self-esteem, the direction of locus of control, and emotional states such as anxiety and frustration.

Based on the analysis of the obtained data, each cluster was given a conditional name.

Cluster No. 1, «Externals», are characterized by adequate self-esteem with a tendency toward low self-esteem, as well as a propensity for vigilance and high rationality. All scales for decision-making coping are above average, meaning that such managers tend to employ various defensive strategies when making decisions in uncertain situations. In the decision-making process, managers with an external locus of control encounter difficulties in making a particular choice. This may manifest as avoidance of responsibility, high tension, low self-control, emotional instability, and ultimately, hasty decision-making. In such cases, the decision is made primarily with the goal of reducing emotional tension, while the choice may be made hastily without thorough analysis. The obtained data on the association of high levels of anxiety and frustration with the use of a broad range of coping strategies among externals are consistent with the transactional model of stress and coping by R. Lazarus and S. Folkman, which was developed in Russian psychology in the works of V. M. Yaltonsky and N. A. Sirota (2008). According to this model, cognitive appraisal of the situation and appraisal of one's own resources determine the choice of coping strategies.

Cluster No. 2, «Rational-Vigilant». These respondents demonstrate an average level of locus of control, low levels of anxiety and frustration, and self-esteem within the normal, adequate range. In the decision-making process, the coping strategy of "vigilance" predominates. Such managers tend to seek out information and carefully consider their decisions in advance before making a final choice. In uncertain situations, they are capable of considering risky decisions in order to achieve their intended outcomes.

Cluster No. 3, «Emotional-Vigilant». In this group of respondents, locus of control also does not exhibit a pronounced direction. However, in contrast to Cluster 2, the levels of anxiety

and frustration are average, and the other mental states aggressiveness and rigidity are also at average levels and higher in value than in other clusters. In terms of decision-making coping, there is a clear predominance of vigilance over the other scales. Thus, this group of respondents is characterized by a vigilant coping strategy in decision-making, accompanied by emotional reactions such as frustration and anxiety. It can be concluded that although decision-making in these respondents is accompanied by emotional reactions, they exhibit the most rational decision-making style-vigilance.

In the present study, respondents in Clusters 2 and 3 demonstrate similar locus of control indicators (within normative values) but differ in the level of emotional reactions. This suggests that it is emotional regulation, rather than only basic beliefs about control, that determines the choice of coping strategies in specific decision-making situations. This finding is consistent with research by E. N. Makhmutova and A. A. Chuganskaya (2021), which showed that respondents with an internal locus of control exhibit higher levels of self-control and the ability to resist stressful factors.

Cluster No. 4, «Internals». In this group, internal locus of control predominates, with a pronounced tendency toward rationality; emotional state values are low, and self-esteem tends to be somewhat inflated. At the same time, vigilance predominates among decision-making coping strategies. These findings are supported by contemporary Russian research. Specifically, in the work of E. A. Bragina and colleagues (2022), significant correlations were established between active problem-focused coping strategies and internality in the domains of achievement and failure, which fully aligns with our data: internals significantly more often employ the productive strategy of vigilance and are less likely to resort to avoidance.

The results of the analysis indicate that the study confirmed the hypothesis that the determinants of coping strategies in decision-making under uncertainty among young managers include the level of self-esteem, anxiety, frustration, and the direction of locus of control.

These findings are consistent with classical and contemporary research in the fields of stress psychology, coping behavior, and personal regulation of decision-making. In the study by S. N. Rekhovskaya and colleagues (2025), it was shown that the use of optimal coping strategies and the presence of an internal locus of control are key to psychological readiness for successful independent professional activity in extreme conditions. The authors emphasize that it is precisely emotional regulation and a well-formed professional identity that enable specialists to maintain adaptive coping strategies even in situations of high stress.

The identified differences in self-esteem levels between clusters and their relationship with the choice of coping strategies are corroborated by research conducted by S. K. Nartova-Bochaver (2005), which demonstrates that self-esteem serves as a significant predictor of mental health and coping with stress. In the context of decision-making, the work of S. A. Stanibula (2018) reveals relationships between self-esteem and decision-making styles, showing that adequate self-esteem is associated with more adaptive coping styles. In our study, managers with a tendency toward low self-esteem (Cluster 1) demonstrate variability in coping strategies, including unproductive ones, whereas respondents with adequate or a

tendency toward inflated self-esteem (Clusters 2, 3, and 4) predominantly use the productive strategy of vigilance.

Conclusion

Based on the obtained results, it can be concluded that with an increase in internal locus of control and self-esteem, managers exhibit less anxiety and frustration when making decisions in uncertain situations and are less inclined to use coping strategies such as avoidance, hypervigilance, and procrastination. Managers with an external locus of control, a tendency toward low self-esteem, and pronounced anxiety and frustration are more prone to using irrational decision-making coping strategies in uncertain situations. The variability of these coping strategies may be associated with the heterogeneous nature of the phenomenon of uncertainty and may depend on many factors, particularly on the individual's personality characteristics. This issue represents a promising direction for further research.

The conclusions obtained in the course of this study open up the possibility of implementing a comprehensive program of psychological support for novice managers, aimed at developing adaptive coping strategies and internal resources that ensure effective problem-solving under conditions of uncertainty. Since self-esteem and internal orientation are the primary factors in the choice of successful coping methods, it is advisable to incorporate into the training system for young managers such activities as coaching sessions on goal-setting, seminars on developing personal leadership effectiveness, time management courses, building self-confidence, and consciously accepting responsibility. To reduce emotional tension in uncertain situations and prevent the use of unproductive coping strategies, training in stress management, self-regulation techniques, emotional intelligence development, decision-making under uncertainty, and individual coaching sessions are recommended.

When interpreting the obtained results, it is necessary to consider a number of limitations that may affect the generalizability of the conclusions. The construction industry is characterized by a high degree of uncertainty (seasonality, dependence on economic conditions, administrative barriers), which may shape specific patterns of coping behavior that differ from those in other fields of activity. Additionally, the study did not account for the influence of the organizational culture of specific companies on the formation of preferred coping strategies. Differences in corporate standards, management styles, and motivation systems may significantly modify individual decision-making patterns. It should also be noted that this study is cross-sectional in nature, which does not allow for establishing causal relationships or tracking the dynamics of changes in the characteristics under study over time.

The results obtained and the limitations identified indicate directions for future scientific research. It is planned to conduct additional research aimed at identifying the relationships between the individual personality characteristics of managers and their decision-making processes, to expand the arsenal of diagnostic tools for studying the range of coping strategies they employ, and to supplement research methods with indicators of objective management

effectiveness (supervisor evaluation, achievement of key performance indicators, expert assessment of the quality of decisions made). Furthermore, it is intended to broaden the study's participant base by including representatives from various fields of activity (manufacturing, information technology, education, medicine) in order to identify the specific features of the influence of personal factors on the choice of coping strategies depending on the industry.

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Ksenia V. Farbitnik – formation and description of the empirical sample, conduct of the study, mathematical and statistical processing of empirical data, discussion of the results and their practical significance, writing of the review section of the article.

Lyudmila S. Skripnichenko – theoretical substantiation, writing of the «Abstract» section, writing of the «Introduction» section, participation in the preparation of the final text of the article.

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Conflict of Interest Information

The authors declare no conflict of interest.