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AGE-RELATED STUDENT DECISION-MAKING PROCESSES FROM INTUITION TO REFLECTION: A MULTICULTURAL SAMPLE

***Annotation.** Decision-making competence is increasingly recognized as a foundational skill in higher education, yet empirical research on how such cognitive*

processes vary across developmental stages in student populations remains limited. This study addresses this gap by examining age-related differences in nine decision-making dimensions among a diverse sample of undergraduate students. These findings align with dual-process theories of cognition and contribute to recent findings that underscore the developmental trajectory of executive functions and emotion-related learning.

Key words: *decision making, intuitive decision-making; rational decision-making; dual-process theory; decision-making styles.*

Анотація. *Компетентність у прийнятті рішень все частіше визнається фундаментальною навичкою у вищій освіті, проте емпіричні дослідження того, як когнітивні процеси змінюються на різних етапах розвитку у студентських популяціях, залишаються обмеженими. Дане дослідження усуває цю прогалину, досліджуючи вікові відмінності у дев'яти вимірах прийняття рішень серед мультикультурної вибірки. Ці результати узгоджуються з теоріями подвійного процесу пізнання та сприяють висновкам, які підкреслюють траєкторію розвитку виконавчих функцій та навчання, пов'язаного з інтуїтивними емоціями.*

Ключові слова: *прийняття рішень, інтуїтивне прийняття рішень; раціональне прийняття рішень; теорія подвійного процесу; стилі прийняття рішень.*

Introduction. Decision-making is a critical skill for students in higher education, influencing not only their academic performance but also their career trajectories and personal growth. Emerging adulthood (ages 18–25) represents a transitional developmental stage in which individuals consolidate self-identity, autonomy, and social competence [2 - 4]. This developmental period is critical for consolidating self-identity, emotional regulation, and cognitive maturity, all of which shape decision-making processes. Although decision-making among adolescents and adults has been studied extensively, the specific processes characterizing university-age populations remain underexplored. Drawing on dual-process theories of

cognition [5; 6; 10], decision-making is understood as the interplay between fast, intuitive, emotional, heuristic, affective processes (System 1) and slow, analytic, deliberative, reflective processes (System 2). Prior research suggests that System 2 capacities mature earlier, while System 1 processes, including emotional integration, self-regulation, and reflective judgment and intuitive spontaneity, continue to develop through the mid-twenties [7; 10; 11].

Also it has been established that effective leadership in student age is provided by such features as the ability to self-discovery, self-assertion, pronounced independence, the ability to self-determination, the desire for collectivity, public activity etc [18, p.120]. Thus, it's age for open ability for development of rational and Intuitive Decision Making. The *integral aim* of modern researches is the development of professional managerial skills and thinking, specially intuition as a component of rational and intuitive decision making in context of Educational Management [20, p.224]. So, we can make manifestation of intuition as important aspect in context of educational managerial competence. It is quite obvious that there is a need for multi-faceted consideration of the above-mentioned issue in accordance with its significance for educational management.

This article aims to address the gap by investigating age-related differences in decision-making dimensions within a multicultural sample of undergraduate students, contributing to management, educational management and educational psychology by illuminating the developmental heterogeneity within university populations.

The problem of scientific and theoretical substantiation and development of functional system of professional training, that takes into account age-related differences in decision-making dimensions within a multicultural sample according to practical needs of modern society and integration of the national education system into the international educational space is not completely solved, and this, in turn, negatively is reflected on the level of professional training and is not contributed for competitiveness of the domestic and international labor markets [21, p.323].

Presentation of the research material.

Literature Review. Decision-Making and Intuition in Higher Educational Management. In the researches of modern socialists, psychologists and educators, the problem of formation of the competitiveness of student-manager in context of International Educational Management is delighted in the process of professional training [8; 9; 12; 22; 23], in extracurricular work, in social activities [16; 17]. Let's mention Intuition decision-making as a concept that has been studied across various disciplines, such as management, sociology, psychology, and philosophy [11; 13; 16, p. 25].

Intuitive knowledge is very complex. It should not be taken for granted or otherwise discounted. In fact, educators should devote more time and energy to understanding and improving their knowledge about intuition, they need to become more reflective and more aware of their responses. Effective leadership in student age is provided by such features as the ability to self-discovery, self-assertion, pronounced independence, the ability to self-determination, the desire for collectivity, public activity etc. Thus, it's age for open ability for development of rational and Intuitive Decision Making [16, p. 242]. Dual-process theories offer a conceptual framework for understanding developmental changes in decision-making [5, p. 225]. And Dual-process models highlight the distinction between System 1 (intuitive-emotional) and System 2 (deliberative-analytic).

Research Gap. Most prior studies treat “university students” as a homogeneous group or compare them broadly to adolescents/adults and adopt broad age categories (adolescents vs. adults), overlooking subtle developmental differences within the university years. Few studies have examined single-year age cohorts to identify subtle within-group differences [13; 14; 15, p. 125]. This study addresses this gap by examining and analyzing decision-making in fine-grained age cohorts (across eight consecutive age groups). To develop measurement scales on different types of intuition for the use in research and teaching the following building blocks are used: rational choice theory, intuitive decision making, emotional decisions, quick heuristic decisions, unconscious thinking and anticipation. Based on the individual approaches, the new multi-disciplinary approach [11; 13; 16, p. 25] will be used to develop a

more holistic approach. By classifying intuitive processes into these categories, students of different categories can receive training tailored to their specific roles and the depth of their knowledge needs. There is a blend of emotional intuition, anticipation, and unconscious thinking that makes up intuition for strategic decision-making. Using these mental faculties well should be the mainstay of educational management development [23; 24, p. 32].

Methodological Analysis

1)Context and Theoretical Framework. The study within the domain of management, educational management and educational psychology in the context of decision-making and research, focusing on a relatively underexplored population: university students in the emerging adulthood stage (ages 18–25).

Existing research has largely examined adolescents (developmental psychology) or adults (organizational psychology, behavioral psychology). The transitional university years, however, are crucial for identity formation, self-regulation, and critical thinking, making decision-making skills a vital competence for academic and life success. The study draws upon dual-process theories of cognition [10; 19; 22, p. 125]., which differentiate between:

System 1 (fast, intuitive, emotional, heuristic-based reasoning)

System 2 (slow, analytical, deliberate reasoning). The research attempts to map how these processes evolve as students progress through different stages of young adulthood.

2)Methodology of measures.

Sample: The study included 838 undergraduate students, representing diverse cultural and academic backgrounds, aged 18–25. Participants were categorized into eight single-year cohorts (18, 19, 20, 21, 22, 23, 24, 25 years). By dividing participants into single-year cohorts, the study provides a fine-grained developmental perspective rather than broad groupings (e.g., «young vs. older student»).

Measures and Dimensions of Decision-Making

Launer and Cetin [23] provide a comprehensive model which is useful to measure rational and intuitive decision-making of students, representing diverse

cultural and academic backgrounds, aged 18–25. Their measurement instrument proposees based on the above mentioned studies, twelve different types of styles, but in this studies *Nine key areas were measured*:

3 Rational decision-making: Analytic, Planning, and Knowing

6 Intuitive decision-making: Holistic Unconscious, Spontaneous, Heuristic, Slow Unconscious, Emotions, Anticipation

The different decision-making styles are briefly introduced and described, where the dimensions come from:

Analytic is a rational style with logical evaluation, analytical and logical manner, problem solving, deliberative thinking on facts and details [21].

Planning is a rational style associated with sequential, structured, conventional, planned confirmative, and systematic routines [25].

Knowing is a rational style with understanding facts and details without the reasoning behind [9].

Holistic Unconscious is an intuition style based on experiential ability in abstract terms or holistically in a Gestalt-like, non-analytical manner [1].

Spontaneous is an intuition style with a speed and efficient automated information processing.

Heuristic is an intuition style with an experience-based automated information processing.

Slow Unconscious is an intuition style with an unconscious reflection and activation develops in a period of time with distractions.

Emotions is an intuition style relying on feelings.

Anticipation is an intuition style based on hunches and vibes [23].

This structure acknowledges the multidimensionality of decision-making rather than treating it as a single trait. These dimensions capture both reflective-analytic and intuitive-emotional aspects of decision-making.

Statistical Analysis: Data were analyzed using Welch's One-Way ANOVA, appropriate for unequal variances, strengthens the reliability of findings across heterogeneous groups. Statistical significance was set at $p < .05$.

Results. *Significant age-related differences were found in three dimensions:*

Knowing ($p = .032$), Spontaneous ($p = .041$), and Emotions ($p = .049$) showed age-related variation. Younger students (18–20) scored lower than older students (21–25).

Interpretation: Early-stage undergraduates rely less on intuitive knowledge, have less-developed emotional integration in decisions, and are less capable of spontaneous yet effective decision-making. These capacities mature with age and experience. *Non-Significant Differences were observed in:* Analytic, Planning, Unconscious, Heuristics, Slow Unconscious, and Anticipation. This suggests that logical-analytical reasoning stabilizes earlier in cognitive development, while emotional-intuitive dimensions continue to develop during university year (Table 1).

Table 1

Decision-Making Dimensions by Age

Decision-Making Dimension	Age-Related Difference	Trend (18–20 years vs. older)
Analytic	Not significant	Stable
Planning	Not significant	Stable
Knowing	Significant ($p = 0,032$)	Lower in younger students
Unconscious	Not significant	Stable
Spontaneous	Significant ($p = 0,041$)	Lower in younger students
Heuristics	Not significant	Stable
Slow Unconscious	Not significant	Stable
Emotions	Significant ($p = 0,049$)	Lower in younger students
Anticipation	Not significant	Stable

Discussion. The results demonstrate that younger undergraduates are less proficient in emotional and intuitive decision-making compared to students in their early to mid-twenties. The findings indicate that while analytic and planning skills stabilize in early adulthood, intuition, emotional regulation, and spontaneous decision-making continue to mature during university years. These results corroborate research in executive function and brain development that emphasizes ongoing maturation of the prefrontal cortex and emotional regulation systems into the mid-twenties [11; 13; 16; 25; 27, p.48].

Conclusions. This study confirms that decision-making development during emerging adulthood is uneven across dimensions. While analytic reasoning and

planning stabilize early, capacities related to intuition, emotions, and spontaneity continue to mature throughout the undergraduate years. Recognizing these developmental differences has significant implications for pedagogy, for educators and student support services to enhance student learning and decision-making competence. By tailoring education science, curricula and student support services to students' developmental needs, higher education institutions can foster more effective decision-making, thus can better prepare students for academic success and real-world challenge, supporting both academic and life outcomes. In light of contemporary challenges, such as AI-driven transformations, the demands of internationalisation, lifelong learning imperatives, and economic uncertainty, decision-making competence emerges as a multidimensional skill essential for academic, professional, and personal resilience. Higher education institutions must therefore design pedagogical interventions that combine traditional reflective training with AI-enhanced learning, intercultural exposure, and employability-oriented lifelong learning frameworks. Such an approach will prepare students to thrive not only in their studies but also in dynamic global societies.

Perspective. This research contributes significantly to bridging a gap in educational management and psychology by focusing on emerging adults a developmental stage often overlooked. The findings highlight that while analytic reasoning stabilizes early, the integration of intuition, emotions, and spontaneity is still developing in younger undergraduates. Recognizing and supporting these differences can make higher education more responsive to students' cognitive and emotional growth trajectories.

In conclusion, the development of professional managerial skills and thinking, especially intuition as a component of rational and intuitive decision making in the context of Educational Management at the Age-Related aspect has great importance for providing abovementioned aspects in Higher Education. The specified standards are not implemented without the appropriate professional training, which should be provided to future specialists in the leading universities of the country. Future actual and perspective researches can be provided in next Directions Longitudinal Studies,

Cross-Cultural Comparisons, Interventions and Experiments, Link with Academic/Professional Outcomes and achievements, correlations with GPA, leadership roles, stress management, or career success etc.

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