EXPLORATORY PATH ANALYSIS OF LIFE-CHOICE STRATEGIC DECISION-MAKING: THE CASE OF TERTIARY EDUCATION ENROLLMENT

[a]KATARINA KOSTELIĆ, [b]MARLI GONAN BOŽAC,
[c]DARKO ETINGER

Juraj Dobrila University of Pula, Zagrebačka 30, 52100 Pula
email: [a]katarina.kostelic@unipu.hr,
[b]marli.gonan.bozac@unipu.hr, [c]darko.etinger@unipu.hr

This research was funded by "The role of emotions in strategic decision-making" (380-06-19-1)—an internal project at the Faculty of Economics and Tourism "Dr. Mijo Mirković" Pula.

Abstract: This paper examines laypeople's strategic decision-making by focusing on the example of tertiary education enrollment, a strategic life choice with long-term implications. The study design follows a standard decision-making approach, considering available alternatives, evaluation criteria, and decision-making process while exploring emotions' role in this context. Qualitative responses from a survey (n=527) were analyzed and coded for quantitative analysis. The findings reveal differences between the reported decision-making process and the standard approach, emphasizing the influence of emotions. Two distinct decision-making paths related to short- and long-term benefits in enrollment choices were identified, leading to policy recommendations. The research highlights the mediating effect of dominantly negative emotions on decision and satisfaction and the distinctive relationship between dominantly positive and negative emotions on decision outcomes. Particularly, the role of dominantly negative emotions in the long-term context suggests their influence in enhancing strategic orientation during decision-making processes. Additionally, the study challenges the conventional separation between causes, evaluation criteria, and alternatives in decision-making models, suggesting the need for improved methods that account for interconnectedness.

Keywords: strategic decision-making; emotions; transitional choice; tertiary education enrollment; long-term implications; path modelling

1 Introduction

Life choices regarding higher education enrollment, career and job choices, detachment from the family home and choice of residence, partnership formation, and having children can be understood as transitional choices [1], [2]. The path of solving the transitional choices is not linear, and there can be a regression to an earlier stage, discontinuity, or rapid progression. Still, in any case, it is assumed that those choices bear long-term consequences for the success and quality of a person's life. Completing such decisions is understood as a threshold for ending youthhood and entering adulthood. However, due to those choices' importance and long-term consequences, they may also be seen as strategic choices in one's life – parallel to managers' strategic decision-making. An event is considered strategic in a business environment if it is 'important, in terms of the actions taken, the resources committed, or the precedents set' [3]. Hence, the decision about enrollment in higher education can be understood as a strategic decision-making event in one's life. On the other hand, understanding decisions about enrollment in higher education may help design policies and nudges to achieve European Commission goals in Croatia, aiming for the share of 25-34 year-olds with tertiary educational attainment in a population of minimally 45% by 2030 [4].

If the event of the enrollment choice is observed through the lenses of strategic decision-making, the managerial approach to decision-making must be a starting point. Strategic management and decision sciences usually describe the decision-making process through stages. Such an approach observes decision-making as a process that presumably follows the stages of identifying and defining the problem, determining the set of alternatives, determining the evaluation criteria, applying the evaluation criteria, and choosing an alternative [5]. The decision-making process is a part of the problem-solving process, which also incorporates the choice of implementation and appraisal of the consequences. In strategic events, the decision-making process can also be observed as strategic decision-making in a narrow sense and the process of problem-solving as strategic decision-making in a broader sense [6]. In both cases, the stated approach also assumes that the decision-maker is rational, well-informed, objective in the assessment, and most often has autonomy over the decision-making process. Still, the classical approach also involves the possibility of using quantitative methods to support decision-making, which contributes to rationality and objectivity.

However, some choices inherently involve subjectivity and personal preferences, which contributed to developing multicriteria decision-making methods (for example, [7], [8]). Buchanan et al. [7] addressed the issue of the perception of the alternatives and the role of the perception in alternatives evaluation that deviates from the classical understanding of the evaluation. The role of personal factors in decision-making has also been acknowledged in managerial decision-making [9]. The notion of entirely human managers and decision-makers opened the question of the role of emotions in strategic decision-making [6]. Emotions can be understood as subjective experiences that occur as a reaction to a stimulus and can have various consequences [10].

The research on the role of emotions in decision-making differs in approaches and observed stages in decision-making. Emotions can be observed as activators that trigger the awareness of the problem and increase engagement in decision-making [11]. Similarly, Schwartz [12] proposes that emotions can serve as information that activates and guides decision-making. In line with that thought, Loewenstein et al. [13] suggest that emotions may act as risk and uncertainty indicators. Gaudine and Thorne [14] highlight the importance of the level of emotional arousal, while Andrade and Ariely [15] show that even fleeting emotions may have a long-term impact on behavior.

Researchers predominantly assume that emotions play a role in decision-making as a bias or have a moderating effect ([11], [16], [17], [18], [19]). For strategic decision-making in a narrow sense, dominantly positive emotions induce the formulation of a competitive goal, and dominantly negative emotions lead to a focal goal [6], [20]. During the stage of alternative generation, dominantly negative emotions lead to a more systematic approach, whereby dominantly positive emotions lead to a flexible and relaxed approach [21]. Anger is related to a person's sense of responsibility and autonomy, and it is directed toward another person blamed for a situation that undermines responsibility and autonomy [16], [22]. Fear stems from risk, uncertainty, and a perceived lack of control [16]. In the alternatives' evaluation and decision-making stage, fear and anxiety cause aversion to the risker alternatives, while happiness and anger increase riskier behavior [6], [13]. Sadness leads to focusing on the details [23], creativity, and generating more alternatives, appreciation, original choices, and choices closer to the optimum [18]. On the contrary, dominantly positive emotions, such as happiness, signal a good state and lead to superficial assessment and judgment with the choices that deviate more from the optimum [18]. More generally, Schwarz [12] suggests that emotions help govern an individual's decisions and behavior by avoiding dominantly negative emotions and directing them toward dominantly positive emotions.

Self-determination, as the ability to take primary control over one's life and do that in a personally meaningful way [24], enables the person to act as a causal agent [25]. However, even when acting as causal agents, people's choices are shaped by emotions. Besides emotions, individuals' choices can be driven by several other influences. First, personal preferences, beliefs, perceptions, and interests can direct available alternatives perception, as well as the selection of the criteria for evaluation [25], [26], [27].

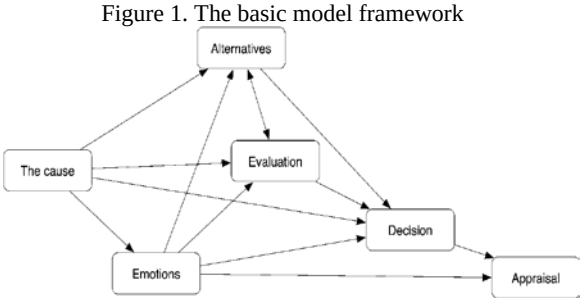
For a decision about enrollment in higher education, there can be a parental or family influence or friends' and peers' influences. Individuals value higher education concerning family values, transferred by socialization [28]. Moreover, parental opinions may be strong, or the parents may be controlling, thereby causing a diminishing sense of a person's autonomy, intrinsic

motivation, creativity, and conceptual understanding [29], [30], [31]. The peer influence may be relevant for persons who decide on enrollment in youthhood, where research focuses on the impact on risky decisions and prosocial behavior [32], concluding that it depends on the context and may be positive or negative.

Moreover, a socioeconomic environment may play a role at the micro-level (for example, the values and financial possibilities related to a family) and macro-level (for example, the dominant values in a country, opportunities for continuing education, etc.) and thus creating actual and perceived limitations in decision-making. The socioeconomic status of an individual or their family [33], [34] can influence the perception of available alternatives and direct occupational choice, regardless of their school performance [35]. Political, economic, cultural, geographical, and historical circumstances enclose an environment where individuals make choices [36]. The measures introduced by the government or institutions (or the lack thereof) can act as enabling or limiting aspects of decision-making. While policymakers underline individual freedom, they create socially structured patterns [36] that can direct a person's choices toward enrollment and a perspective field choice (or not).

Starting from the classical approach to decision-making, additional insights reveal the complex mosaic of the influences present in strategic decision-making, emphasizing the higher education enrollment decision. This paper explores the individuals' decision-making processes for higher education enrolment within a classical framework, with a particular interest in the role of emotions (Figure 1).

Figure 1. The basic model framework



Instead of the decision-making issue definition or problem identification, which would be the decision about higher education enrollment, the causes or triggers are introduced. If people do not recognize the causes of the problem, they probably do not recognize the need to decide on the subject matter. However, the lack of an action or a decision is an action in itself, and a missed opportunity bears its own set of consequences.

The causes, alternatives, and evaluation criteria may be subjective, biased, and influenced by a person's environment. It is assumed that the causes lead to the alternatives' generation and evaluation criteria selection and trigger emotions. Moreover, it is assumed that there is an effect of emotions on the alternatives' generation and evaluation. Given the previous findings, the relationship between the alternatives and evaluation is fuzzy. Some criteria may be present even at the alternatives' generation stage, denoted by a two-way arrow in Figure 1. The alternatives and their evaluation lead to the decision, as does the assumed mediating effect of emotions. The decision-making event, the consequences of the decision, and emotional enhancement lead to the appraisal of the decision-making event. Such a setting enables the examination of the role of emotions in strategic decision-making in a broader sense and the exploration of the relevant factors for satisfaction with the choice and its consequences, as well as the comparison to the classical approach.

This research aims to gain a better understanding of laypeople's strategic decision-making, starting from a classical decision-making framework. The first research objective is determining whether laypeople's strategic decision-making adheres to the presumed process (Figure 1). The second research objective is to determine the specific effects of the causes, alternatives, and emotions on the decision and the event appraisal.

The paper continues to the Methodology section and description of the questionnaire creation and data collection. The first part of the analysis involves qualitative investigation, describing data coding and grouping. The second part of the analysis regards the quantitative analysis of the coded data based on path analysis. The following section conveys the results of the analyses. The discussion section examines the effects in line with previous findings and their implications for further research. The conclusion summarizes the main aspects of the paper, focusing on the contributions, limitations, and possibilities of further investigation.

2 Materials and Methods

2.1 Questionnaire

This research uses a developed questionnaire approved as ethically acceptable within the "The role of emotions in decision-making" research framework by the Decision of the Commission for the Evaluation of the Ethics of Research on 9.12.2019 at the Juraj Dobrila University of Pula. Informed consent was obtained on the first page of the questionnaire for each respondent. The questionnaire content and item description are available in the Supplementary file (Table 1).

2.2 Data Collection and the Sample

The sampling for this exploratory research was a quota sample stratified by age group and gender. The goal was to obtain enough data to include various experiences by each gender and each age group. The age is stratified into the following groups: born in 1964 or before, born between 1965 and 1980, born between 1981 and 1994, and after 1995. Thus, the targeted respondents are Croatian adults (18 years or older).

The questionnaire was distributed online from January to June 2020. The business economics students were engaged as pollsters within the graded assignments about data collection (Statistics in economy) and decision-making (Management, Strategic management). By June 2020, 590 responses were collected, of which 527 were complete, which is considered an excellent response rate for a questionnaire with an open-ended question.

2.3 Qualitative Analysis

The questionnaire involves qualitative responses, which should be coded for further analysis. The first question is open-ended, and explanatory answers are coded. The content of the responses was coded by only two human coders—the researchers. Cohen Kappa confirms high interrater reliability for coded causes, alternatives, evaluation, and satisfaction (0.873, 0.976, 0.926, and 0.988, respectively). The coding of the first open-ended question consists of a quantitative and a qualitative part. Quantitative is brought to the enrollment or non-enrollment in the high education (binary) and the satisfaction (three levels) with the chosen option. The qualitative aspects of the first question were: the reason or cause of college enrollment or non-enrollment, the alternatives to this decision, and evaluation criteria in decisions about higher education enrollment or non-enrollment. The complete coding process is described in detail in the Supplementary file.

2.4 Path Analysis

Understanding and predicting choices and behaviors in social sciences often involve latent variables, resulting in complex statistical models [37]. PLS path modeling is the appropriate method for further exploring the relationship of the variables in the decision-making process. The motivation to use this

approach is that PLS path modeling requires no assumptions about the underlying data. It can be applied in various situations and is favored if the structural model contains formatively measured constructs [38]. A characteristic of the technique is that it estimates the model's partial regression relationships, meaning that it examines each relationship separately and not all connections in the model at once.

However, it allows only recursive models, meaning the relationship between the alternatives and evaluation criteria must be examined separately. Also, its use in confirmatory applications is limited [38]. In this case, the method is used in the exploratory investigation, so its limitations should have little impact. The path modeling is conducted using SMART PLS software, v.3.3.7. [39].

One rarely utilized advantage of PLS-SEM is to model discrete choices [40]. According to the same authors and Lohmoller [41], the solution corresponds to a binary linear regression if a PLS path model has a dependent binary single-item construct. Hair et al. [40] argue that PLS-SEM can be used both for rational and heuristic decision-making, namely in the same area where traditional discrete choice modeling has been applied. However, the advantages of PLS-SEM path modeling also enable the distinction of rational and heuristic choices when parameter estimations as a whole are relevant [37].

Initially, coded nominal variables were recoded into separate binary variables for each identified cause, alternative, and evaluation criteria (1 indicates the occurrence, else 0). The emotions were grouped by averages into dominantly positive and dominantly negative emotions. Initial examinations showed that individual emotions create too much noise in the model and work better joined into groups of dominantly positive and negative emotions. The decision about the enrollment is coded one if they decided to enroll, else 0. In addition, the variables regarding satisfaction (the event appraisal, cognitive and affective aspects of satisfaction with the decision consequences) were coded 1 for negative, 3 for neutral, and 5 for positive appraisal to match the emotions' scale.

In this case, the enrollment decision is a single-item measure that stems from the nature of the observed phenomenon. However, single-item measures like enrollment are appropriate for measuring observable phenomena [38]. A person either chooses to enroll or not. While PLS path modeling can handle single-item constructs, such measures tend to influence the reliability and validity and increase estimates' biases, leading to the models' lower predictive ability [42]. This is identified as a methodological limitation. Another methodological limitation is non-normal distributions of grouped emotions, with more expressed skewness and kurtosis for dominantly positive emotions with inflation of zeros. That might lead to problems in assessing the parameters' significance by inflating standard errors from bootstrapping.

The model structure is based on the theoretically assumed process of decision-making, based on the classical approach, and enriched for emotions (Figure 1). However, the data enables additional examination of the causes, alternatives, and evaluation criteria. The variables related to the cause are indicators that construct the group of causes. Similarly, the alternatives and evaluation criteria variables are treated as manifest variables that form the alternatives and evaluation criteria groups. Thus, the exogenous latent variables are the causes, alternatives, and criteria groups. The relationships between the constructs are examined in line with the basic framework (Figure 1). The event appraisal and cognitive and affective satisfaction with the decision consequences reflect the overall satisfaction (endogenous latent variable). While the primary interest is to examine the mediating effect of emotions in decision-making about enrollment, as an example of strategic decision-making in a narrow sense, such a model setting also allows for the examination of the event appraisal (based both on the decision-making event and its consequences), thus extending the example to strategic decision-making in a broader sense.

The initially assumed relationships were integrated into the model, but some of the relationships proved to have low outer loadings and coefficients of low value and are not significant. Also, it is important to note that the analysis showed that gender and age display no relevant (in terms of effects) nor statistically significant relationship to any other variable. The possibility of constructing the cause, alternatives, and evaluation as in a single model was explored but discarded due to low outer loadings. However, the subsequent analysis yielded two complementary and significant models, revealing statistically significant relationships and better information criteria.

3 Results

3.1 Sample Description

Of 590 persons that approached filling in the questionnaire, 527 complete responses were collected. The resulting sample is mostly balanced in age and gender distributions. 54 % of respondents are female (Table 1). Most respondents were born between 1995 and 2010 (35.1%), while 21.82 % were born between 1981 and 1994, 22.39 % between 1965 and 1980, and 20.68 % before 1964. At the time of questionnaire completion, the youngest respondent was 20 years old, and the oldest was 71 years old. The sample is balanced with somewhat younger respondents compared to the general population.

Table 1. Respondents by age and gender

Gender/Age	<=1964	1965 - 1980	1981 – 1994	1995 - 2010	Total
Male	53	57	58	73	241 (45.73%)
Female	55	61	57	112	285 (54.07%)
Non-binary	1				1 (0.2%)
Total	109 (20.68%)	118 (22.39%)	115 (21.82%)	185 (35.1%)	527

The socioeconomic questions in the distributed questionnaire enable the examination of whether the sample reflects relevant educational characteristics of the population. The data from the last Census in 2021 is still being processed, so available final indicators of the distribution of education levels in Croatia are from the Census in 2011 [43]. According to the Census, 37.53 % of the population (15 years or older) finished elementary school, was enrolled in elementary school, or finished 1-3 or 4-7 grades. 47.06 % of the population finished high school, 4.07 % finished undergraduate studies, 7.8 % completed graduate studies, and in 0.67 % of the cases, the education level is other or unknown.

According to the same data, at the time of the Census in 2011, 45.23 % of the population 15 years or older finished or was enrolled in the general educational program (no specialization, such as elementary or grammar school), 22.67 % were educated in the field of engineering, manufacturing, or construction, 12.91 % in social sciences, 9.07 % in the services and the rest in agriculture, services, education, humanities and art, and natural sciences. In addition, there are more women (52.49 %) than men. Due to the 10-year difference and respondents ' age, these data are not directly comparable to the sample, so an additional source is employed. Regarding the field of education, in 2019/2020 [44], the distribution of all enrolled students in Croatia indicated there were 45 % enrolled in social sciences, 26 % in technical sciences, 12 % enrolled in biomedicine and health, 7 % in humanities, 5 % in biotechnical sciences, 4 % in the natural sciences, 2 % in the interdisciplinary fields of science, and 2 % in the art field. The distribution has not changed much since the academic year 2013/2014. Again, the data is not directly comparable, as the report denotes only persons currently enrolled in higher education. However, combined with the Census, it indicates interest in the fields and approximates what can be expected in the sample.

Table 2 is a contingency table of respondents by their field of education and the highest completed level of education. It seems that the respondents span over higher levels of education than

Census 2011 indicates. The reason for such distribution may be the ongoing educational trends of higher enrollment rates, in line with the ET 2020 [45] goals of participation in lifelong learning and tertiary education attainment. Education and Training Monitor 2019 [46] reports a 12.8 % increase since 2009 in tertiary education attainment, and in 2019, 34.1 % of the persons aged 30-34 attained tertiary education in Croatia. Also, there is a coherence between the percentages of persons educated in social sciences in the sample and enrolled in the student population (by the AZVO report), with more educated in technical and natural sciences and lower shares of educated in other fields.

Table 2. Respondents by field and level of education

Field/ Highest level of education	High school	Undergraduate	Graduate	Postgraduate	Other	Total
Natural sciences	35	2	5	0	2	44
Biomedicine and healthcare	24	3	6	2	0	35
Technical sciences	117	15	21	4	2	159
Biotechnical sciences	2	1	2	0	1	6
Social sciences	141	62	25	5	8	241
Humanities	7	5	4	0	0	16
Interdisciplinary fields of science	6	1	1	0	0	8
Art field	14	1	2	0	0	17
Interdisciplinary fields of art	1	0	0	0	0	1
Total	347	90	66	11	13	527

Note: The fields are derived from scientific and art fields valid in Croatia (NN 118/2009).

While somewhat higher heterogeneity in the field of study was expected in the sample, the potential implications of the characteristics of collected data could lead to a bias. The field of education distribution can be related to the perceived possibilities and alternatives while deciding on enrollment. The qualitative data, especially the descriptions of perceived alternatives, could reveal if that was the case.

3.2 The Groups of Variables

Initial insights show that approximately 56 % of the respondents decided to continue their studies after high school. 75.52 % had no alternative in mind while deciding on continuing education. Only 0.19 % had two alternatives while making a choice, and 24.29% had one option besides the chosen one while deciding about education continuation. If there were an alternative, it was related to employment in 18.41 % of the cases. Most respondents (60.72 %) evaluated the alternatives according to personal preferences or personality. Following frequent evaluations refer to specialization and a better employment perspective. In 88.05 % of the cases, the possibilities were weighted by at least one evaluation criterion, while 11.95 % did not state any evaluation criteria. The most rarely applied evaluation criteria were the perceived quality of the study program, used by only 2.28 % of the respondents. Most respondents (58.94%) are satisfied with their choice, 11.6% are dissatisfied, and 29.47% are neither satisfied nor dissatisfied. The verbal statements indicate satisfaction with the choice in 19.17% of responses, and 5.45% verbally expressed dissatisfaction. The variable coding and grouping results are presented in Tables 3 - 5.

Table 3. Groups of causes for a decision about higher education enrollment

Group (frequency) Code	Reasons/ Causes	Code	Frequency	Examples of expressions
Unknown (70)	unknown		70	/
Financial (102) Code: CF	eager to get a job to earn money or already work	U1	52	"I didn't enroll in college because I got a job after high school."
	eager to earn more in the future (due to higher education)	U2	2	"I enrolled in college for a better salary in the future."
	unable to continue education because of the lack of funding	U3	45	"I did not enroll in college due to financial impossibility."
	unable to roll in the program in another town/ lack of funding	U4	3	"...but due to the proximity and the financial situation..."
Personal (243) Code: CP	aversion towards the learning	U5	9	"I'm just not for college. If I were focused and learning enough, interested in something, I would be in college. But I was not for learning properly, always friends, basketball, this - that. I wasn't even in school for learning."
	lack of desire or ambition	U6	42	"My decision not to enroll in college was due to the fact that I was not interested in college at all."
	uncertainty or a random choice of a study program	U7	9	"Because I was hesitant, I paused a year after high school. I wanted to enroll in the Faculty of Law …but on all enrollment deadlines, I would always change my mind at the last minute… was a consequence of indecision…. "
	desire to gain skills and knowledge, a better future perspective	U8	178	"I have always wanted to open my own business, and in order to gain prior knowledge that I could apply in business, I decided to enroll in management and entrepreneurship."
	did not get accepted into the desired program	U12	5	"I enrolled in … because I didn't go where I wanted."
Social (84) Code: CS	family reasons	U9	14	"I didn't enroll in college because of my father's illness ..."
	parents talked me into continuing education	U10	26	"My family … encouraged me and made me interested in it."
	the lack of possibilities for enrolment	U11	21	"Other colleges did not accept me, I could only go to this one."
	social reasons (including war)	U13	23	"I chose my college because of the new environment, meeting new people, to become independent…." "I did not enroll in college because of the war in the country."
Vertical (28) Code: CV	continuation in the same field of study as the VET school	U14	28	"…I went to technical high school."

Table 4. Group of alternatives in deciding about higher education enrollment

Group (frequency) Code	Alternatives (besides the chosen one)	Code	Frequency	Examples of expressions
Unknown (313)	unknown		313	/
Employment (139) Code: AE	Employment	A1	139	"… go to college because, at this time, it is hard to find a job just with high school."
Another study program	Another field of study	A2	9	"… I was forced to enroll in this faculty, not the one I wanted."

(41) Code: AS	Same field of study in a different location	A3	11	"After thinking and thinking, I decided to study at the Faculty of Economics in Sarajevo... I decided to go to college in Croatia..."
	Another field of study in a different location	A4	8	"When choosing and enrolling in college…the alternative was the opposite of this faculty where I am currently… than moving to another city played a role."
	Another field of study in an exact location	A5	13	"My alternative was history and English, but since in the year of enrollment, this was not available … the current faculty."
Delay (1) Code: AD	Postponing decision	A6	1	"I didn't enroll in college …, but I intend to enroll next year."
Other (33) Code: AO	Other	A7	33	"I went abroad after high school, so I never enrolled in college."

Table 5. Groups of evaluation criteria in decisions about higher education enrollment

Group	Evaluation criteria	Code	Frequency	Examples of expressions
Long-term benefits (527) Code: EL	better employment perspective	V1	86	"…the profession as scarce and lucrative…."
	specialization of a study program	V6	116	"…because I believe that after graduation, I will have all the necessary competencies."
	personal preferences/ proclivities	V8	325	"I was interested in economics and nothing else."
Short-term benefits (110) Code: ES	the cost of education	V2	54	"At the time when I was enrolling in college, the only financially viable opportunity for me to study was close to where I lived."
	start earning quicker	V3	56	"After high school, I immediately entered the job market because I needed the money…."
Quality (12) Code: EQ	perceived quality of a study program	V4	12	"The choice of faculty depends… on the quality of the faculty itself."
Limitations (38) Code: ER	family reasons	V5	38	"... to get away from my parents..."
Other (120) Code: EO	other	V7	120	"…because there are more opportunities in that city…."

3.3 Exploratory Path Models

During the analysis, it became clear that the enrollment decision is not as unique and straightforward a process as thought to be. First, the emotions had to be separated into dominantly positive and negative emotions due to their fundamentally different role and effects. Moreover, depending on the initial causes and reasons for the decision and the evaluation criteria, the enrolment decision modeling better captures the paths if separated into the two models. The reported models are selected based on information criteria (BIC) comparison. The first important difference between the models is that the first one encompasses the causes that can be seen as restrictive, while the second one involves the causes that can be seen as motivating. Probably a more significant distinction between the models is revealed with the short-term and long-term focus in the evaluation; hence it is used for naming them.

3.3.1. Evaluation of the measurement model

The proposed model contains formatively specified constructs, single-item constructs, and one reflective construct. As most constructs are formative, the evaluation emphasizes the formative measurement model.

In such cases, convergent validity is examined by redundancy analysis. The redundancy analysis has not been conducted in this case. The reason is that all the responses are coded from the qualitative responses. That means the unified construct is a binary variable corresponding to the indicators' values, thus creating a singular system.

The variance inflation factors (VIF) values (inner and outer) indicate no collinearity issues. All outer VIF values (Table 6) are below the conservative threshold of 3, so collinearity does not pose an issue in this case.

Table 6. VIF values

Constructs	Outer VIF values
Dominantly negative emotions (NEMO)	1.000
Dominantly positive emotions (PEMO)	1.000
Satisfaction (SAT)	
EA	1.6
CCA	1.806
ACA	1.262
Alternative-employment (AE)	1.000
Decision (D)	1.000
Causes – financial (CF)	
U1	1.01
U3	1.01
Causes – personal (CP)	
U5	1.002
U6	1.002
Causes – social (CS)	
U11	1.002
U13	1.002
Causes-theoretical (CT)	1.000
Causes-vertical (CV)	1.000
Evaluation – short-term benefits (ES)	
V2	1.008
V3	1.008
Evaluation – long-term benefits (EL)	
V1	1.031
V6	1.161
V8	1.164

The reliability measures are expressed only for the reflective construct (SAT), indicating sufficient reliability [47]. Rho_A is above the 0.7 cut-offs, and AVE is above 0.5 (Table 7). While one outer loading is below the suggested threshold of 0.708, its removal in exploratory analysis depends on its contribution to reliability. In this case, removing affective event appraisal (ACA) leads to lower reliability.

Table 7. Reliability measures for a reflective construct (SAT)

Construct	Outer loadings	Cronbach's Alpha	Rho_A	Rho_C	Average Variance Extracted (AVE)
Satisfaction (SAT)	EA 0.863 CCA 0.877 ACA 0.634	0.719	0.784	0.839	0.639

The heterotrait–monotrait ratios (HTMT, Table A.1, A.2) do not exceed the standard boundary of 0.85 for any correlation over the constructs. HTMT is a more reliable measure of discriminant validity than Fornell-Larcker criteria if indicators' loadings differ even slightly [48]. Therefore, the construct satisfies discriminant validity.

Table 8 offers an overview of indicator weights for both models. All indicators of formative constructs are statistically significant at a 1 % level. The lowest loading is 0.51, which is above the threshold of 0.5 [49], confirming the theoretical basis and implying the relevance of these indicators.

Table 8. Statistical significance and relevance of the indicator weights

Model 1	**Sample mean**	**Standard deviation**	**T-statistics**	**P values**	**Outer weights**
U1 → CF	0.598	0.063	9.536	0.000	0.51
U3 → CF	0.860	0.042	20.488	0.000	0.805
U11 → CS	0.734	0.139	5.370	0.000	0.716
U13 → CS	0.677	0.156	4.467	0.000	0.666
U5 → CP	0.575	0.199	2.924	0.003	0.55
U6 → CP	0.797	0.164	5.084	0.000	0.813
V2 → ES	0.763	0.059	12.940	0.000	0.817
V3 → ES	0.580	0.076	7.651	0.000	0.646
A1 ← AE	1.000	0.000			1
nemo ← NEMO	1.000	0.000			1
pemo ← PEMO	1.000	0.000			1
D ← D	1.000	0.000			1
Model 2	**Sample mean**	**Standard deviation**	**T-statistics**	**P values**	**Outer weights**
U14 ← CV	1.000	0.000			1
U8 ← CT	1.000	0.000			1
V1 → EL	0.432	0.055	7.912	0.000	0.569
V6 → EL	0.684	0.046	14.811	0.000	0.849
V8 → EL	0.286	0.060	4.812	0.000	0.599
A1 ←AE	1.000	0.000			1
nemo ← NEMO	1.000	0.000			1
pemo ← PEMO	1.000	0.000			1
D ← D	1.000	0.000			1

3.3.2 Evaluation of structural models

Several model characteristics must be considered while evaluating a model. First, a collinearity issue is examined using antecedent VIF values (Table 9). The VIF values range from 1 to 2.82, remaining below the conservative threshold of 3 and indicating that collinearity is not problematic for the models.

Table 9. Antecedent VIF values

Model 1			Model 2		
Antecedent	Construct	VIF value	Antecedent	Construct	VIF value
CS	AE	2.819	D	SAT	1.416
ES	AE	2.719	NEMO	SAT	1.414
D	SAT	1.579	CT	EL	1.316
NEMO	SAT	1.443	NEMO	D	1.315
ES	SAT	1.271	NEMO	EL	1.288
NEMO	D	1.156	EL	D	1.272
AE	D	1.156	AE	D	1.204
CF	NEMO	1.048	CV	EL	1.065
CS	AE	1.045	PEMO	SAT	1.040
CP	AE	1.043	CT	PEMO	1.000
PEMO	SAT	1.041	CT	NEMO	1.000
CO	NEMO	1.038	EL	AE	1.000
CS	NEMO	1.035			
CF	ES	1.000			
CS	PEMO	1.000			

A very important criterion for assessing the structural path model is the significance and relevance of the path coefficients [38]. All of the coefficients expressed in model 1 and model 2 are statistically significant at a 0.01 level of significance, except for the relationship between the ES and AE, which is statistically significant at a 0.05 level.

Model 1 (Figure 2) best describes the decision-making processes with the evaluation focused on the short-term benefits that frequently end up with a non-enrollment. The financial causes (CF) are formed with U1 (eager to get a job to earn money or already work) and U3 (unable to continue education because of the lack of funding), while U2 and U4 did not have sufficient loadings. The variables U11 (the lack of possibilities for enrolment) and U13 (sociopolitical reasons) explain social causes (CS), while U9 and U10 had low loadings and were removed. Personal causes in this model are formed by U5 (aversion towards learning) and U6 (lack of desire or ambition), while U7 and U12 were removed. In addition, variable U8 did not perform well within the group of personal causes (CP). It was separated from the theoretical aspiration (CT), which did not prove relevant or significant for this model. Alternative evaluation (ES) is formed with V2 (the cost of education) and V3 (start earning quicker). Of all the alternatives, only AE (employment) proved relevant and remained in the model. The overall satisfaction (SAT) is reflected by the event appraisal (EA), cognitive consequences appraisal (CCA), and affective consequences appraisal (ACA).

Model 2 (Figure 3) best describes the decision-making processes with the evaluation focused on the long-term benefits that most frequently end with enrollment. This model's remaining variables are single-item constructs except for EL and SAT. Theoretical cause (CT) is variable U8, previously classified as part of the personal causes group, but it was identified as a separate, specific cause during the path analysis. The evaluation based on the long-term benefits (EL) is formed by V1 (better employment perspective), V6 (specialization), and V8 (personal preferences/ proclivities). As in model 1, in model 2, SAT is reflected by EA, CCA, and ACA.

Figure 2. The model of enrolment decision with the focus on short-term benefits (model 1)

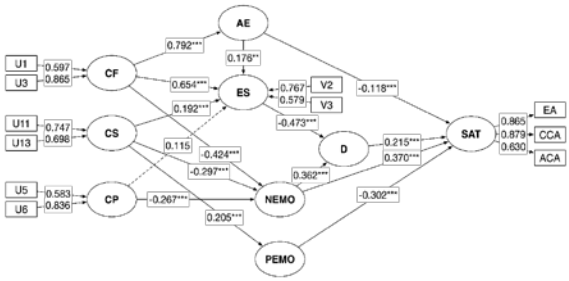


Figure 3. The model of enrolment decision with the focus on long-term benefits (model 2)

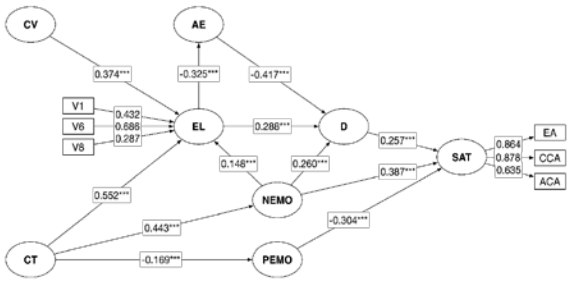


Table 10 shows R-squared and adjusted R-squared values for the constructs in both models. In the first model, the best-explained construct is ES (evaluation of alternatives oriented on the short-term benefits), followed by AE (alternative – employment). The best-explained constructs in the second model are D (decision about enrollment) and EL (evaluation of alternatives oriented on the long-term benefits). The least explained construct in both models is PEMO (dominantly positive emotions), meaning that whatever reasons or causes for the decision about the enrollment, they do not explain triggering these emotions well. However, some variations in NEMO (dominantly negative emotions) are explained by the causes (as the triggers). Model 1 shows a higher coefficient of determination when comparing the models, meaning it is somewhat easier to explain the choices based on the short-term evaluation. More precisely, the indicators revealed in responses better explain the relationships in the first model. The exception is the decision about enrollment (D), better explained in the second model. That might also mean that the decisions made focusing on the long-term benefits are harder to capture by respondents' recollections of the event. Overall, both models indicate moderate explicative power.

Table 10. R squared

Model 1	NEMO	PEMO	SAT	AE	D	ES
R^2	0.255	0.042	0.494	0.623	0.480	0.627
Adj R^2	0.251	0.040	0.490	0.620	0.478	0.627
Model 2	NEMO	PEMO	SAT	AE	D	EL
R^2	0.196	0.028	0.482	0.106	0.545	0.479
Adj R^2	0.195	0.027	0.479	0.104	0.542	0.476

In addition to revealed relationships, there are some statistically significant and relevant indirect effects (Table 11). In the first model, minor adverse effects on decisions and satisfaction from financial and social causes are mediated by dominantly negative emotions.

Table 11. Relevant specific indirect effects

Model	Specific Indirect Effects	Coefficients
Model 1	CF → NEMO → D	-0.153
	CF → ES → AE	0.14
	CF → AE → D	-0.309
	CF → NEMO → SAT	-0.157
	CS → NEMO → D	-0.107
	CS → NEMO → SAT	-0.11
	AE → D → SAT	-0.101
Model 2	CV → EL → D	0.108
	CT → EL → D	0.159
	CT → EL → AE	-0.179
	CV → EL → AE	-0.122
	CT → NEMO → SAT	0.172
	CT → NEMO → D	0.115
	AE → D → SAT	-0.107
	EL → AE → D	0.135

Given the emphasis on emotions, the revealed indirect effects point to possible mediation, which requires closer insight. In the first model, dominantly negative emotions demonstrate partial complementary mediation of the relationship of financial and social causes to decisions (Table 12), where variance accounted for (VAF) is 35.74%. The direct effect between financial causes and satisfaction is not significant, so no mediating effect occurs. The mediations of dominantly negative emotions on the relationships between social causes and decision and satisfaction are complementary, as both direct and indirect effects are significant and point in the same direction. Since VAF values are 28.31% and 31.97%, respectively, it can be concluded that partial mediation occurs. Similarly, in the second model, such mediation occurs for relationships between theoretical causes and decision (VAF=46.68%) and satisfaction (VAF=24.79%).

Table 12. Mediation effects involving NEMO

Model	Relationship	Direct effect	Total effect	Specific indirect effect	Product of the paths	VAF (%)
Model 1	CF → NEMO → D	-0.275***	-0.528***	-0.153***	0.042	35.74
	CF → NEMO → SAT	-0.07	-0.363***	-0.157***	0.011	69.09
	CS → NEMO → D	-0.272***	-0.198***	-0.107***	0.029	28.31
	CS → NEMO → SAT	-0.234***	-0.214***	-0.11***	0.026	31.97
Model 2	CT → NEMO → SAT	0.196***	0.32***	0.172***	0.034	46.68
	CT → NEMO → D	0.35***	0.376***	0.115***	0.04	24.79

3 Discussion

The purpose of the research was to gain a better understanding of decision-making while individuals make important life choices, taking higher-education enrollment as an example. Such decisions can be understood as strategical in a person's life, so a starting point was a classical strategic decision-making framework. The survey collected descriptive responses about their choices in higher education enrollment. The qualitative data was analyzed for initial insights and coded for quantitative path analysis.

The two models differ in the causes and evaluation criteria. The main difference is that the first model depicts strategic decisions on tertiary education attainment by evaluating alternatives with short-term benefits. However, the causes or the triggers also distinguish the paths – the inability to make any decision other than to earn money leads to such weighing of the alternatives. It can be concluded that the first model better demonstrates the path where the causes, alternatives, and evaluation of alternatives lead to the choice of not continuing education. In contrast, the second shows the path to enrollment into higher education programs. In addition, the first model comprises somewhat restrictive causes, and the second one includes motivating reasons. In both models, the causes are related to the evaluation criteria; the required breakdown into two models shows two fundamentally different paths in deciding about enrollment.

Moreover, the relationship between the causes and the alternative to enrollment is present in the first model but not in the second one. That confirms that for the respondents who decided on their enrollment in line with the first model, (mainly) the environment created restrictions perceived as the causes of making the decision. While this reminds of post-hoc justification bias, it also reveals that the first model basically describes the decision-making under restrictions, where the chosen alternative to education was - to an extent - forced. The lack of a relationship between the causes and alternatives in the second model can be interpreted such that the respondents were aware of employment as a possibility. However, it also suggests that their perceived alternatives stem from their assessment and not restrictions, allowing more free choice and causal agency [25] and resulting in more successful and profitable careers.

The most prominent effects show that the elimination of financial restrictions and encouragement of personal development and academic aspirations should lead to higher enrollment rates, which is in line with the set goals ("The share of 25-34 year-olds with tertiary educational attainment should be at least 45%, by 2030," [4]). Given that the current (latest available data from 2019) tertiary education attainment share is 34.1 % in Croatia and is below the EU average, the education policy should be driven to achieve the required growth in the following decade. An effort should be made to remove perceived barriers to continuing education regarding social and financial causes. Another way to encourage enrollment is to enhance the decision-making process by empowering high-school graduates with enough information and decision-making skills, emphasizing long-term focus.

The causes of financial, social, and personal nature lead to lower intensities of experiencing dominantly negative emotions. The ambivalent role of social reasons is revealed in its contribution to increased dominantly positive emotions (the first model). The theoretical reasons relate to increased dominantly negative and lower dominantly positive emotions (the second model). It is interesting to notice that the causes do not explain well dominantly positive emotions in either model. Still, in both models, dominantly positive emotions experienced at the time of the decision negatively affect satisfaction: quite contrary, dominantly negative emotions lead to higher satisfaction afterward. The biological approach to emotions argues that dominantly positive emotions signal a good state that does not have to be changed ([21], [6], [18]).

In contrast, dominantly negative emotions urge a person to change the situation. That logic can be applied in this case; if the respondents with experienced dominantly negative emotions acted upon them and changed their position, they experienced higher satisfaction afterward. Likewise, if the respondents who experienced dominantly positive emotions at the time were not compelled to change their situation and missed an opportunity, it later led to lower overall satisfaction. Such interpretation is

reinforced by the relationship between dominantly negative emotions and the decision, while the effect of dominantly positive emotions on the decision is not significant.

In addition, dominantly negative emotions mediate the effect of financial, social (first model), and theoretical (second model) causes on decision and satisfaction. In the first model, those effects are negative, and in the second, they are positive. That means respondents who experienced restrictive causes combined with dominantly negative emotions are less likely to enroll and have lower overall satisfaction. In contrast, reasons that can be seen as motivating, combined with dominantly negative emotions, lead to enrollment and higher satisfaction.

A significant effect on evaluation additionally emphasizes the role of dominantly negative emotions. Moreover, such a relationship appears only for a long-term evaluation (second model). Dominantly negative emotions enhance the evaluation towards - not just closer to optimal choice [18] but - to the long-term optimum.

The analysis yields two models with fundamentally different paths in enrollment choices: the first model, characterized by restrictive causes, emphasizes short-term benefits, while the second model, featuring motivating reasons, underscores long-term advantages. Strategic decision-making can be understood as a process of evaluating alternatives and choosing a course of action that aligns with long-term goals and objectives to achieve advantage and success. Only one of the two models satisfies the “long-term goals” criteria, so it can be argued that only the second model depicts strategic behavior. Moreover, the expression of dominantly negative emotions in the long-term context suggests their role in enhancing strategic orientation in decision-making, aligning with a focus on long-term strategic goals.

Both models indicate that the causes that trigger the decision-making process affect the evaluation criteria. The classical decision-making models with underlying rationality assumptions clearly distinguish the two. The same is true for the relationship between the alternatives and evaluation, where the two concepts should be kept separate. However, the models of higher education enrollment decisions show that causes affect the evaluation and evaluation affects the alternatives. Moreover, it seems that the causes and the circumstances at the time of decision skew or even block the perception or the awareness of all possible alternatives (model 1), lowering one’s self-determination. In addition, both the considered alternatives and their evaluations may stem from a person’s preferences (model 2) and thus increase self-determination [24], [25], [26], [27]. Another possible explanation for this finding may lie in post-hoc justification. In other words, while reflecting on the choices made, respondents may have focused on a single stream of possibilities that justify the chosen path.

Subjectivity in human decision-making is inevitable, and so are fallacies, biases, and heuristics. However, the implications of the findings to the causes-alternatives-evaluation criteria relationship relate to the models used to assist in decision-making that include a subjective approach. Many multicriteria decision-making methods include a subjective approach to the alternatives and evaluation criteria, requiring them to be kept separate. The exploratory models indicate that people are not good at achieving such separation. Should further research point out the same conclusion, that would mean that methods that employ a subjective approach could (should) be further improved to compensate for the inherent effect between the categories.

4 Conclusion

The paper deals with strategic decision-making in life choices while examining a choice of tertiary education enrollment. Such a choice can be considered a strategic event in one’s life, as it bears importance through the involved resources, both committed and expected (knowledge, career, salary). A choice of this relevance in strategic management would involve setting the objective, examining the alternatives, and evaluating the alternatives in line with a set of criteria.

Following the classic decision-making approach that involves determining the causes, available alternatives, evaluation criteria, and the decision as a guideline, along with adding emotions, a survey was conducted in Croatia. The collected qualitative responses were analyzed and later coded for quantitative analysis. The quantitative analysis involves exploratory path modeling. As such, the analysis can serve as an example of the possible use of PLS-SEM for coded qualitative data instead of standard survey data, with a cautionary note and a limitation regarding the redundancy analysis. In this case, the method enables a primarily formative model but reveals possibilities for further use of the methodology.

The approach highlights the subjective nature of decision-making, particularly regarding causes, alternatives, and evaluation criteria. It shows that these aspects are interconnected and influence each other, challenging the conventional separation between them in decision-making models. Particularly, the results show that the causes that trigger the decision-making process also affect the evaluation criteria applied, which goes against the classical approach (to an extent). The classical decision-making models with underlying rationality assumptions clearly distinguish the two. The results suggest that people are not good at achieving such separation.

The analysis yields two models. The first model comprises somewhat restrictive causes, and the second includes motivating reasons. The two models show two fundamentally different paths in enrollment: focusing on short-term or long-term benefits. If the causes were restrictive, it might be that the respondents seek their agency in perceiving the causes and alternatives as delivered by their assessment and not objective restrictions. Restrictive social and financial causes have the most prominent effect on choosing not to enroll in tertiary education. In addition, the often disregarded role of emotions reveals their effect on decisions and satisfaction.

An effort should be made to remove perceived barriers to continuing education regarding social and financial causes. Another way is to enhance the decision-making process by empowering high-school graduates with enough information and decision-making skills, emphasizing long-term focus. By identifying financial, social, and personal factors influencing enrollment decisions, policymakers can design strategies to remove barriers and encourage individuals to pursue higher education. The research's findings also have implications for organizations in terms of policy and strategy formulation. For example, understanding the impact of financial and social factors on decision-making in the context of higher education enrollment can help organizations design employee benefits and development programs that support employees' career aspirations and personal growth.

By examining how emotions affect the decision-making process for higher education enrollment, the study offers insights into the complex interplay between rationality and emotional factors in strategic decision-making. Strategic decision-making requires alignment with long-term goals and objectives, and the role of dominantly negative emotions in the long-term context suggests their influence in enhancing strategic orientation during decision-making processes.

This understanding can be applied to organizational settings, where managers and employees regularly face critical decisions that shape the direction and success of the organization. This knowledge is also relevant for leadership development programs, as it can help develop emotionally intelligent leaders who can manage their emotions effectively, use them as information, and make sound decisions in complex and uncertain situations. In addition, the research can be used in management education to introduce students to the complexities of decision-making in both personal and organizational contexts. By incorporating the role of emotions and subjective factors, educators can provide

students with a more comprehensive understanding of managers' decision-making challenges.

By viewing transitional choices as strategic decisions, the study provides a new perspective on understanding the long-term consequences of such decisions. By acknowledging the role of emotions, the study challenges the traditional view of rational decision-making and contributes to understanding human behavior in strategic choices. Managers often face high-stake decisions, and their emotions can impact the choices they make and the outcomes of those decisions. Understanding the role of emotions can help managers become more self-aware and make better-informed decisions.

The research acknowledges the importance of personal preferences and influences in decision-making processes. This recognition is valuable for organizations, as decisions made within a company are influenced not only by rational considerations but also by the individual motivations, values, and emotions of decision-makers. Managers can use this knowledge to foster a more inclusive decision-making process considering diverse perspectives and subjective elements.

Although the dataset is not small, further research should explore a probability sample from different regions and countries. In addition, other transitional choices (and other strategic choices) remain to be explored in future research. The sample comprised somewhat younger people than the population, which can bias the results, especially regarding the event appraisal. Further research should explore a probability sample from different regions and countries to enable additional insights and comparison. Generalizing conclusions require further study, preferably with a further questionnaire development where the relevant variables can be examined through the indicators as latent variables. While the research tackles the strategic decision-making in choosing tertiary education enrollment, other transitional choices (and other strategic choices) remain to be explored in future research.

Supplementary materials are available at: https://osf.io/c5yth/?view_only=26c91abb622749e588c3b5abbc281c32

Literature:

1. King R, Williams AM. Editorial introduction: New European youth mobilities. Popul Space Place [Internet]. 2018 Jan [cited 2023 Aug 2];24(1):e2121. Available from: https://onlinelibrary.wiley.com/doi/10.1002/psp.2121
2. Kostelić K, Fleșeriu C. Causal agency and influences on transitional choices: Comparison of Croatian and Romanian youth. Economics & Sociology [Internet]. 2023 Jun [cited 2023 Aug 2];16(2):11–25. Available from: https://www.economics-sociology.eu/?957,en_causal-agency-and-influences-on-transitional-choices-comparison-of-croatian-and-romanian-youth
3. Eisenhardt KM, Zbaracki MJ. Strategic decision making. Strat Mgmt J [Internet]. 1992 [cited 2023 Aug 2];13(S2):17–37. Available from: https://onlinelibrary.wiley.com/doi/10.1002/smj.4250130904
4. EC. Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) [Internet]. Official Journal of the European Union; 2021. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=uriserv:OJ.C_.2021.066.01.0001.01.ENG
5. Anderson DR, Sweeney DJ, Williams TA, Camm JD, Cochran JJ. An introduction to management science: quantitative approach. Cengage learning; 2018.
6. Neumann F. Antecedents and effects of emotions in strategic decision-making: a literature review and conceptual model. Management Review Quarterly. 2017;67(3):175–200.
7. Buchanan J, Sheppard P, Vanderpoorten D. Ranking projects using the ELECTRE method. In: Operational Research Society of New Zealand, Proceedings of the 33rd Annual Conference. 1998. p. 42–51.
8. Saaty TL, Vargas LG. Models, Methods, Concepts & Applications of the Analytic Hierarchy Process [Internet]. Boston, MA: Springer US; 2012 [cited 2023 Aug 2]. (International Series in Operations Research & Management Science; vol. 175). Available from: http://link.springer.com/10.1007/978-1-4614-3597-6
9. Brotheridge CM, Lee RT. The emotions of managing: an introduction to the special issue. Brotheridge CM, editor. Journal of Managerial Psych [Internet]. 2008 Feb 15 [cited 2021 Dec 14];23(2):108–17. Available from: https://www.emerald.com/insight/content/doi/10.1108/02683940810850763/full/html
10. Frijda NH. The Laws of Emotion [Internet]. 1st ed. Psychology Press; 2017 [cited 2023 Aug 2]. Available from: https://www.taylorfrancis.com/books/9781351543019
11. Lerner JS, Li Y, Valdesolo P, Kassam KS. Emotion and Decision Making. Annu Rev Psychol [Internet]. 2015 Jan 3 [cited 2021 Dec 14];66(1):799–823. Available from: https://www.annualreviews.org/doi/10.1146/annurev-psych-010213-115043
12. Schwarz N. Feelings-as-Information Theory. In: Handbook of Theories of Social Psychology: Volume 1 [Internet]. 1 Oliver's Yard, 55 City Road, London EC1Y 1SP United Kingdom: SAGE Publications Ltd; 2012 [cited 2023 Aug 2]. p. 289–308. Available from: https://sk.sagepub.com/reference/hdbk_socialpsychtheories1/n15.xml
13. Loewenstein GF, Weber EU, Hsee CK, Welch N. Risk as feelings. Psychological Bulletin [Internet]. 2001 [cited 2023 Aug 2];127(2):267–86. Available from: http://doi.apa.org/getdoi.cfm?doi=10.1037/0033-2909.127.2.267
14. Gaudine A, Thorne L. Emotion and ethical decision-making in organizations. Journal of Business Ethics [Internet]. 2001 [cited 2023 Aug 2];31(2):175–87. Available from: http://link.springer.com/10.1023/A:1010711413444
15. Andrade EB, Ariely D. The enduring impact of transient emotions on decision making. Organizational Behavior and Human Decision Processes [Internet]. 2009 May [cited 2023 Aug 2];109(1):1–8. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0749597809000211
16. Angie AD, Connelly S, Waples EP, Kligyte V. The influence of discrete emotions on judgement and decision-making: A meta-analytic review. Cognition & Emotion [Internet]. 2011 Dec [cited 2021 Dec 14];25(8):1393–422. Available from: http://www.tandfonline.com/doi/abs/10.1080/02699931.2010.550751
17. Hassett ME, Reynolds NS, Sandberg B. The emotions of top managers and key persons in cross-border M&As: Evidence from a longitudinal case study. International Business Review [Internet]. 2018 Aug [cited 2023 Aug 2];27(4):737–54. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0969593116303614
18. Treffers T, Klarner P, Huy QN. Emotions, time, and strategy: The effects of happiness and sadness on strategic decision-making under time constraints. Long Range Planning [Internet]. 2020 Oct [cited 2021 Dec 14];53(5):101954. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0024630118304564
19. Gonan Božac M, Kostelić K. HR Managers' Emotions in Strategic Decision-Making Events: Evidence from Croatia. Sustainability [Internet]. 2021 Jan 16 [cited 2021 Dec 14];13(2):845. Available from: https://www.mdpi.com/2071-1050/13/2/845
20. Louro MJ, Pieters R, Zeelenberg M. Dynamics of multiple-goal pursuit. Journal of Personality and Social Psychology [Internet]. 2007 Aug [cited 2023 Aug 2];93(2):174–93. Available from: http://doi.apa.org/getdoi.cfm?doi=10.1037/0022-3514.93.2.174
21. Schwarz N. Feelings as information: Informational and motivational functions of affective states. The Guilford Press; 1990.
22. Kiefer T. Understanding the Emotional Experience of Organizational Change: Evidence from a Merger. Advances in Developing Human Resources [Internet]. 2002 Feb [cited 2023 Aug 2];4(1):39–61. Available from: http://journals.sagepub.com/doi/10.1177/1523422302004001004
23. Schwarz N. Emotion, cognition, and decision making. Cognition & Emotion [Internet]. 2000 Jul [cited 2023 Aug 2];14(4):433–40. Available from: http://www.tandfonline.com/doi/abs/10.1080/026999300402745

24. Pierson MR, Carter EW, Lane KL, Glaeser BC. Factors Influencing the Self-Determination of Transition-Age Youth With High-Incidence Disabilities. Career Development for Exceptional Individuals [Internet]. 2008 Aug [cited 2021 Dec 14];31(2):115–25. Available from: http://journals.sagepub.com/doi/10.1177/0885728808317659
25. Shogren KA, Wehmeyer ML, Palmer SB, Forber-Pratt AJ. Causal Agency Theory: Reconceptualizing a Functional Model of Self-Determination. Education and Training in Autism and Developmental Disabilities. 2015;50(3):251–63.
26. Wehmeyer ML, Shogren KA, Little TD, Lopez SJ, editors. Development of Self-Determination Through the Life-Course [Internet]. Dordrecht: Springer Netherlands; 2017 [cited 2023 Aug 2]. Available from: http://link.springer.com/10.1007/978-94-024-1042-6
27. Reis HT, Sheldon KM, Gable SL, Roscoe J, Ryan RM. Daily Well-Being: The Role of Autonomy, Competence, and Relatedness. :17.
28. Carey RL. "Keep that in mind…You're Gonna go to College": Family Influence on the College Going Processes of Black and Latino High School Boys. Urban Rev [Internet]. 2016 Dec [cited 2021 Dec 14];48(5):718–42. Available from: http://link.springer.com/10.1007/s11256-016-0375-8
29. Deci EL, Ryan RM. Human Autonomy. In: Kernis MH, editor. Efficacy, Agency, and Self-Esteem [Internet]. Boston, MA: Springer US; 1995 [cited 2023 Aug 2]. p. 31–49. Available from: http://link.springer.com/10.1007/978-1-4899-1280-0_3
30. Guan P, Capezio A, Restubog SLD, Read S, Lajom JAL, Li M. The role of traditionality in the relationships among parental support, career decision-making self-efficacy and career adaptability. Journal of Vocational Behavior [Internet]. 2016 Jun [cited 2021 Dec 14];94:114–23. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0001879116300252
31. Hegna K, Smette I. Parental influence in educational decisions: young people's perspectives. British Journal of Sociology of Education [Internet]. 2017 Nov 17 [cited 2021 Dec 14];38(8):1111–24. Available from: https://www.tandfonline.com/doi/full/10.1080/01425692.2016.1245130
32. van Hoorn J, van Dijk E, Meuwese R, Rieffe C, Crone EA. Peer Influence on Prosocial Behavior in Adolescence. J Res Adolesc [Internet]. 2016 Mar [cited 2021 Dec 14];26(1):90–100. Available from: https://onlinelibrary.wiley.com/doi/10.1111/jora.12173
33. Bozgeyikli H, Eroglu SE, Hamurcu H. Career decision making self-efficacy, career maturity and socioeconomic status with Turkish youth. Education Sciences and Psychology. 2009;1(14):15–24.
34. Allendorf K, Thornton A. Caste and Choice: The Influence of Developmental Idealism on Marriage Behavior. American Journal of Sociology [Internet]. 2015 Jul [cited 2023 Aug 2];121(1):243–87. Available from: https://www.journals.uchicago.edu/doi/10.1086/681968
35. Laughland-Booÿ J, Mayall M, Skrbiš Z. Whose choice? Young people, career choices and reflexivity re-examined. Current Sociology [Internet]. 2015 Jul [cited 2021 Dec 14];63(4):586–603. Available from: http://journals.sagepub.com/doi/10.1177/0011392114540671
36. Hodkinson P, Sparkes AC. Careership: a sociological theory of career decision making. British Journal of Sociology of Education [Internet]. 1997 Jan [cited 2021 Dec 14];18(1):29–44. Available from: http://www.tandfonline.com/doi/full/10.1080/0142569970180102
37. Sarstedt M, Hair JF, Nitzl C, Ringle CM, Howard MC. Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses! International Journal of Market Research [Internet]. 2020 May [cited 2023 Aug 2];62(3):288–99. Available from: http://journals.sagepub.com/doi/10.1177/1470785320915686
38. Hair Jr JF, Sarstedt M, Hopkins L, Kuppelwieser VG. Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. European business review. 2014;26(2):106–21.
39. Ringle CM, Wende S, Becker JM. SmartPLS 3 [Internet]. Boenningstedt: SmartPLS GmbH; 2015. Available from: http://www.smartpls.com.
40. Hair JF, Ringle CM, Gudergan SP, Fischer A, Nitzl C, Menictas C. Partial least squares structural equation modeling-based discrete choice modeling: an illustration in modeling retailer choice. Bus Res [Internet]. 2019 Apr [cited 2023 Aug 2];12(1):115–42. Available from: https://link.springer.com/10.1007/s40685-018-0072-4
41. Lohmöller JB. Predictive vs. Structural Modeling: PLS vs. ML. In: Latent Variable Path Modeling with Partial Least Squares [Internet]. Heidelberg: Physica-Verlag HD; 1989 [cited 2023 Aug 2]. p. 199–226. Available from: http://link.springer.com/10.1007/978-3-642-52512-4_5
42. Sarstedt M, Wilczynski P. More for less? A comparison of single-item and multi-item measures. Die Betriebswirtschaft. 2009;69(2):211.
43. Croatian Bureau of Statistics (2011) [Internet]. [cited 2022 May 15]. Available from: https://podaci.dzs.hr/hr/
44. AZVO. Udio studenata u pojedinom području znanosti (2013/14 - 2020/21) [Internet]. AZVO; 2022 [cited 2022 May 15]. Available from: https://www.azvo.hr/hr/visoko-obrazovanje/statistike/2123
45. EC. Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020') 2009/C 119/02 [Internet]. Official Journal of the European Union; 2009. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52009XG0528%2801%29
46. EC. Education and Training Monitor 2019 [Internet]. European Commission; 2019 [cited 2022 Mar 1]. Available from: https://education.ec.europa.eu/sites/default/files/document-library-docs/et-monitor-report-2019-croatia_en.pdf
47. Kline. Kline, R.B. (2011). Principles and Practice of Structural Equation Modeling, 3rd ed.; New York, NY: The Guilford Press.
48. Hair JF, Hult GTM, Ringle CM, Sarstedt M, Danks NP, Ray S. An Introduction to Structural Equation Modeling. In: Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R [Internet]. Cham: Springer International Publishing; 2021 [cited 2022 Dec 20]. p. 1–29. (Classroom Companion: Business). Available from: https://link.springer.com/10.1007/978-3-030-80519-7_1
49. Hair JF, Hult GTM, Ringle CM, Sarstedt M, Danks NP, Ray S. Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook [Internet]. Cham: Springer International Publishing; 2021 [cited 2023 Aug 2]. (Classroom Companion: Business). Available from: https://link.springer.com/10.107/978-3-030-80519-7

Primary Paper Section: A

Secondary Paper Section: BB

Appendix:

Table A.1 HTMT values in the first model

	NEMO	PEMO	SAT	AE	D	CT
NEMO						
PEMO	0.170					
SAT	0.661	0.467				
AE	0.367	0.077	0.433			
D	0.535	0.175	0.586	0.606		
CT	0.443	0.169	0.524	0.400	0.625	
CV	0.087	0.084	0.140	0.123	0.193	0.169

Table A.2 HTMT values in the second model

	NEMO	PEMO	SAT	AE
NEMO				
PEMO	0.170			
SAT	0.661	0.467		
AE	0.367	0.077	0.433	
D	0.535	0.175	0.586	0.606