

## Multi Group Analysis (MGA) Investigating the Relationship Between Decision-Making Styles and Personal Growth with the Mediating Role of Emotional Intelligence Among Young Boys and Girls

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### ABSTRACT

**Purpose:** Adolescents must make crucial decisions that pertain to personal matters and life choices, marking a significant phase in their development. This study aims to explore how decision-making styles and personal growth are correlated, with emotional intelligence playing a mediating role, in both young males and females.

**Methods and Materials:** The current study utilized a descriptive-correlational research design and cross-sectional research method, employing structural equation modeling (SEM) and multi-group analysis. The research was conducted on male and female students in Tehran from October to November 2023, with a statistical population consisting of all students in the city during that time frame. A group of 178 students was selected using a multi-stage cluster sampling method in a statistical study. The research utilized the General Decision Making Style Questionnaire (GDMS), Personal Growth Initiative Scale-II (PGIS-II), and Bar-On Emotional Quotient Inventory (EQ-i) as research instruments. The data collected was analyzed using SPSS version 27 for descriptive statistics. We utilized path analysis and Multi-Group Analysis (MGA) with SmartPLS version 4 software. The study considered a p-value of 0.05.

**Findings:** According to the research findings, making rational decisions had a beneficial impact on personal growth through the variable of self-regard ( $D = 0.280$ ,  $P = 0.011$ ). Similarly, spontaneous decision-making had a detrimental effect on taking action for Personal Growth through the variable of self-regard ( $D = -0.178$ ,  $P = 0.020$ ). "Simultaneously, spontaneous decision-making negatively impacted the willingness to take action for personal growth because of the Happiness factor ( $D = -0.213$ ,  $P = 0.045$ )."

**Conclusion:** The findings of this research indicate that the decision-making styles of participants affect their emotional intelligence, and this impact varies between males and females. The research results show that the spontaneous decision-making style hinders the emotional intelligence components in both girls and boys, and only the rational decision-making style positively influences the personal growth of

young individuals. Furthermore, emotional intelligence acts as a mediator, increasing motivation for Personal Growth in boys while decreasing it in girls.

**Keywords:** *Decision-making styles, Personal Growth, Emotional Intelligence, Adolescents*

## 1. Introduction

Adolescents often find themselves in situations where they must select from a wide array of choices, and decision-making is considered a crucial life skill that impacts mental well-being and the ability to assume responsibility for one's decisions, taking into account ethical, social, and safety considerations" (Páez-Gallego et al., 2020). Decision-making involves utilizing information from the current situation and applying one's knowledge to formulate a plan, choose from appropriate actions, and execute them, with factors such as age, expertise, and acute conditions like fatigue playing a role (Silva et al., 2020). The decision-making process involves five key steps: generating alternative solutions, establishing criteria for assessing those alternatives, weighing the consequences of each option, seeking additional information and input from others, and ultimately making a decision by implementing the chosen course of action (Páez Gallego et al., 2020). Research findings have shown a positive correlation between decision-making skills and self-realization in adolescents (Pavai et al., 2021). Furthermore, a study revealed a positive correlation between optimism and successful decision-making, and a negative association between optimism and unsuccessful decision-making (Magnano et al., 2015).

In late adolescence and early youth, young people usually begin to map out their future by considering options like furthering their education, progressing in their careers, developing deeper social relationships, and exploring various aspects of life. Decision-making plays a crucial role in the process of self-actualization, enabling adolescents to identify opportunities for personal growth (Kim, 2022). Taking steps towards personal growth involves acquiring skills that entail a willingness to enhance oneself in various areas of life. This process reflects an individual's interest and commitment to personal growth and change, encompassing four key components: readiness for change, deliberate planning, utilization of available resources, and intentional behavior (Rezaeefard et al., 2020). Studies have indicated that as individuals experience personal growth, they are more inclined to adopt logical and intuitive decision-making styles while displaying a decreased tendency towards avoidant decision-making (Haggins, 2005). Additionally, research has suggested that variations in emotional intelligence among individuals can predict higher levels of

personal growth, highlighting a positive correlation between emotional intelligence and personal growth (Wisner et al., 2016).

Adolescents can achieve comprehensive development by honing their emotional intelligence skills. Emotional intelligence involves understanding, evaluating, and effectively communicating emotions. The capacity to utilize or generate emotions that aid in cognitive processes, comprehending emotions, and employing emotional logic is also encompassed (Portela-Pino et al., 2022). Adolescent benefit from being able to manage their own emotions as well as the emotions of others. Studies show that girls generally have higher emotional intelligence than boys, but boys tend to think they are better at recognizing emotions than girls. Girls tend to undervalue their emotional intelligence, while boys may overestimate theirs (D'Amico & Geraci, 2022). A study highlighted the significance of emotional intelligence as a mediator between personality traits and decision-making styles (El Othman et al., 2020). Furthermore, there is a notable correlation between emotional intelligence and decision-making style, as suggested by another study (Ibrahim & Elsabahy, 2020).

Numerous significant life choices are made during adolescence; these decisions have the potential to impact an individual's entire life. Furthermore, personal growth and emotional intelligence skills can play a crucial role in the lives of adolescents. There is a need for additional research in this field because of the unclear connection between personal growth, emotional intelligence, and various decision-making styles. Furthermore, the topic of this study has not been extensively researched among Iranian adolescents, which highlights the significance of this research in terms of its unique contributions and novel approach to explaining the results. Given the importance of decision-making outcomes for adolescents, the findings of this research can be valuable for those involved in designing and implementing preventive and therapeutic programs for adolescents. This research is among the first to explore the connection between decision-making styles and personal growth, with the role of emotional intelligence as a mediator in adolescents. The research aims to investigate the differences in decision-making styles and personal growth in young men and women based on their emotional intelligence. The researcher has presented the conceptual model of the study in Figure 1.

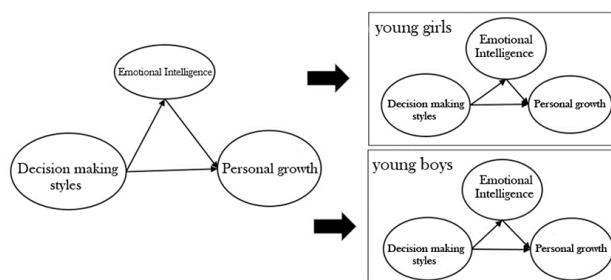


Fig 1: Conceptual framework of the research

contained incomplete or intentionally inaccurate answers. The participants self-reported on the questionnaires. The ethical guidelines were adhered to by ensuring that the forms did not include any personal information and giving participants the choice to opt out of the study. The research assessed three factors connected to decision-making styles, personal growth efforts, and emotional intelligence among all the participants.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The research combined descriptive-correlational and cross-sectional methodologies, using structural equation modeling (SEM) and multi-group analysis (MGA). The target population for the study consisted of male and female students in Tehran during October and November 2023. Multi-stage cluster sampling was used to select 178 participants (87 boys (48.9%) and 91 girls (51.1%)). The sample size adequacy was assessed by applying Cohen's formula from 2013, which considers observed and latent variables, effect size, desired probability levels, and statistical power (Cohen, 2013). Based on the formula, the anticipated effect size was 0.25, the desired statistical power level was 0.8, the number of latent variables was 3, the number of observed variables was 131, and the probability level was 0.01, resulting in a calculated sample size of 181 individuals. To account for potential attrition in the study sample, the researcher increased the sample size to a final count of 200 individuals.

The study inclusion criteria consisted of being a member of the universities at the research site, obtaining informed consent from participants, and possessing adequate literacy and comprehension skills for participation. The criteria for discontinuing the research included any physical ailment preventing responses and failure to answer more than ten questionnaire items leading to withdrawal. The research began with obtaining necessary permits from the researcher's university, followed by creating a list of universities in Tehran based on urban areas and randomly selecting four from the list. The next step involved selecting faculties in universities as clusters, choosing them randomly, and then selecting a random sample of students from each faculty. The researcher then visited the universities, coordinated with faculty members, and selected participants from each faculty. Participants received information on the research goals, permits, and ethical principles before data collection. The data collection and questionnaire completion in person took a month due to the students' lack of cooperation. In the end, 178 out of 200 surveys were analyzed as part of the study, while 22 surveys were excluded because they

### 2.2. Measures

#### 2.2.1. General Decision-Making Style Questionnaire (GDMS)

In 1995, Scott and Bruce developed a self-report questionnaire to assess the decision-making approach of managers (Scott & Bruce, 1995). The questionnaire consists of five subscales: rational, intuitive, dependent, spontaneous, and avoidance. The rational decision-making process (questions 4,7,11,13,25) involves individuals thoroughly evaluating all possible solutions and their consequences to make the best decision. The intuitive decision-making style (questions 1,3,12,16,17) is based on the unconscious processing of past experiences and relies on feelings and implicit learning rather than rational analysis. The dependent decision-making style (questions 2,5,10,18,22) reflects a lack of intellectual and practical independence, as the decision-maker seeks support and guidance from others. The spontaneous decision-making style (questions 8,9,15,20,24) indicates a need for quick decision-making in urgent situations without prior intellectual support. The avoidance decision-making style (questions 6,14,19,21,23) involves delaying decision-making in the face of problems and avoiding reacting to the issue. This questionnaire consists of 25 questions rated on a 5-point Likert scale ranging from completely disagree to agree (1 to 5), with scores ranging from 5 to 25 for each component. Scott and Bruce estimated the reliability of the questionnaire to be 0.85, 0.84, 0.86, 0.94, and 0.87 for decision-making styles. Researchers in Iran have validated the scale's internal consistency at 0.75 (Hosseini et al., 2023). In this study, the researcher determined the Cronbach's alpha coefficient for avoidant decision-making to be 0.884, with a combined reliability value of 0.910 and an AVE value for convergent validity of 0.592. The decision-making style showed a dependency of 0.930, a composite reliability value of 0.944, and an AVE of 0.707. The spontaneous had a coefficient of 0.759 and a composite reliability value of 0.837, with an AVE value of 0.512. The

intuitive had a coefficient of 0.804 and a composite reliability value of 0.856, with an AVE value of 0.592. The rational had a coefficient of 0.720 and a composite reliability value of 0.826, with an AVE value of 0.543.

## 2.2. ۲. Personal Growth Initiative Scale-II (PGIS-II)

In 2012, Robitchek et al. developed a self-report questionnaire to assess personal growth in individuals (Robitschek et al., 2012). The questionnaire comprises two main components - cognitive and behavioral. It consists of 16 questions rated on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree), with total scores ranging from 16 to 80. Scores from 16 to 32 indicate poor personal growth, 32 to 48 signify moderate, and 48 to 80 denote very good. Iranian researchers reported the scale's internal consistency as 0.87. The research revealed a Cronbach's alpha coefficient of 0.811 and a composite reliability value of 0.869. The AVE value for assessing convergent validity was 0.571.

## 2.2. ۳. Bar-On Emotional Quotient Inventory (EQ-i)

Ron Baran created a self-report questionnaire in 2004 to assess emotional intelligence in individuals (Bar-On, 1997). The questionnaire consists of 90 questions and uses a 5-point Likert scale ranging from completely disagree to agree. There are 15 subscales in the questionnaire, including emotional self-awareness, independence, flexibility, happiness, impulse control, interpersonal relationships, optimism, problem-solving, reality-testing, self-regard, self-actualization, assertiveness, social responsibility, empathy, and stress tolerance. Each subscale contains six questions, with scores ranging from 6 to 30. Higher scores indicate a higher level of that particular subscale. A study in Iran found the internal consistency of the questionnaire to be 0.86 and the overall validity to be 0.84 (Torabi Sa'een et al., 2022). The researchers utilized Cronbach's alpha coefficient in the identical study to evaluate emotional self-awareness, independence, flexibility, happiness, impulse control,

**Table 1**

*Demographic characteristics*

Variables	Demographic information	Male	%	Female	%	X <sup>2</sup>	P-value
Living in a student dormitory	Yes	28	32.2%	39	42.9%	2.159	0.142
	No	59	67.8%	52	57.1%		
Marital status	Married	20	23.0%	25	27.5%	0.473	0.491
	Single	67	77.0%	66	72.5%		
Grade	Undergraduate	71	81.6%	68	74.7%	1.232	0.267
	Master's degree	16	18.4%	23	25.3%		
Age	18-20	50	57.5%	52	57.1%	8.483	0.014
	21-25	37	42.5%	31	34.1%		
	26-30	0	0.0%	8	8.8%		

Table 2 shows the mean and standard deviation of the research variables.

**Table 2**

*Description of research variables*

interpersonal relationships, optimism, problem-solving, reality-testing, self-regard, self-actualization, assertiveness, social responsibility, and stress tolerance. The reliability coefficients for each subscale were reported as 0.860, 0.735, 0.885, 0.894, 0.834, 0.887, 0.752, 0.766, 0.763, 0.715, 0.746, 0.740, 0.723, 0.795, and 0.816, respectively. The corresponding validity coefficients were 0.834, 0.905, 0.912, 0.876, 0.929, 0.769, 0.836, 0.835, 0.800, 0.809, 0.836, 0.828, 0.859, and 0.863. All subscales were confirmed to have convergent validity based on the AVE value.

## 2.3. Data Analysis

We employed SPSS version 27 software to carry out descriptive statistics, utilized SmartPLS version 4 software to conduct path analysis, and used Multi-Group Analysis (MGA) to explore the connections between variables. The Shapiro-Wilk test was employed to assess the normality of the distribution of the research variables. The test results indicated significance for the research variables, revealing that they did not adhere to a normal distribution. Consequently, we opted to use SmartPLS due to this non-normal distribution. Our chosen P-value was 0.05.

## 3. Findings and Results

Initially, the researcher examined the descriptive statistics related to the research variables. The participants were categorized into age brackets: 18-20 years old, 21-25 years old, and 26-30 years old. Similarly, based on education level, they were split into undergraduate and master's groups. They were categorized based on their marital status as either single or married. Similarly, those residing in a student dormitory were classified as living in the dormitory or Tehran. As per the Chi-Squared Tests, the demographic variables, except age, showed no significant differences between the two groups of boys and girls ( $P > 0.05$ ).



Variable	Groups	Mean	SD	Independent Samples T-Test			
				t	df	p	MD
Action for personal growth	Man	27.66	4.531	-1.342	176	0.181	-0.894
	Female	28.56	4.354				
Problem-Solving	Man	17.19	3.091	9.478	176	< .001	3.492
	Female	13.70	1.636				
Happiness	Man	17.09	3.248	10.316	176	< .001	3.696
	Female	13.39	1.042				
Independent	Man	16.79	3.600	10.670	176	< .001	4.507
	Female	12.28	1.772				
Stress Tolerance	Man	17.79	2.407	8.387	176	< .001	2.430
	Female	15.36	1.329				
Self-actualization	Man	12.43	1.236	-12.796	176	< .001	-4.695
	Female	17.13	3.201				
Emotional self-awareness	Man	16.06	2.391	-1.233	176	0.219	-0.469
	Female	16.53	2.672				
Reality-testing	Man	16.69	3.727	8.394	176	< .001	3.887
	Female	12.80	2.320				
Interpersonal relationships	Man	17.18	3.135	7.300	176	< .001	2.953
	Female	14.23	2.201				
Optimism	Man	13.10	2.052	-9.665	176	< .001	-3.820
	Female	16.92	3.092				
Assertiveness	Man	13.23	1.545	-9.268	176	< .001	-4.034
	Female	17.26	3.768				
Impulse control	Man	13.13	1.456	0.762	176	0.447	0.149
	Female	12.98	1.140				
Flexibility	Man	13.41	2.311	-1.311	176	0.192	-0.399
	Female	13.81	1.725				
Social Responsibility	Man	17.57	1.444	3.713	176	< .001	1.003
	Female	16.57	2.088				
Empathy	Man	17.00	3.355	-0.746	176	0.456	-0.374
	Female	17.37	3.322				
Self-Regard	Man	16.32	3.391	4.699	176	< .001	2.025
	Female	14.29	2.273				
Rational decision making	Man	14.02	3.605	-4.476	176	< .001	-2.208
	Female	16.23	2.956				
Intuitive decision making	Man	14.66	1.915	-2.779	176	0.006	-0.883
		<b>Female</b>	<b>15.54</b>	<b>2.296</b>			
Dependent decision making	Man	13.39	2.389	-2.331	176	0.021	-0.840
	Female	14.23	2.418				
Spontaneous decision making	Man	15.40	2.244	4.817	176	< .001	1.523
	Female	13.87	1.971				
Avoidant decision making	Man	16.50	1.771	7.332	176	< .001	2.143
	Female	14.36	2.106				

In Table 2, the Independent Samples T-Test shows a significant difference between boys and girls across various variables including Problem Solving, Happiness, Independence, Comprising Stress Tolerance, Self-actualization, Reality-testing, Interpersonal relationships, Optimism, Assertiveness, Social Responsibility, Self-regard, Rational decision making, Intuitive, Dependent, spontaneous and Avoidant ( $P < 0.05$ ).

The investigator explored the underlying assumptions of the test. The Shapiro-Wilk test was used to assess the normality

of the distribution of the research variables, and it produced a significant result ( $P < 0.001$ ) for the research variables, suggesting that they did not display a normal distribution. The researcher's sampling method was random, thus meeting this requirement. There are enough 178 individuals in the sample to carry out the structural equation model using the partial least squares technique.

### Similarity results with Permutation test

Step	step 1.	Step 2.	Hybrid	Step 3. Equality of means		Step 3. Equality of variance	
Variable	sameness	Permutation p-value		Permutation mean difference	Permutation p-value	Permutation mean difference	Permutation p-value
Action for personal growth	Yes	0.146		0.000	0.170	-0.005	0.602
Avoidance decision-making	Yes	0.313		-0.002	0.000	0.013	0.030
Dependent decision-making	Yes	0.334		-0.009	0.016	-0.014	0.917
Emotional self-awareness	Yes	0.291		-0.002	0.188	-0.001	0.170
Independence	Yes	0.107		-0.001	0.000	0.003	0.000
<b>Flexibility</b>	<b>Yes</b>	<b>0.291</b>		<b>-0.007</b>	<b>0.216</b>	<b>-0.018</b>	<b>0.136</b>
Happiness	Yes	0.190		-0.001	0.000	0.006	0.000
Impulse control	Yes	0.298		-0.000	0.449	0.007	0.143
Spontaneous decision making	Yes	0.120		0.001	0.000	0.015	0.057
Interpersonal relationships	Yes	0.216		-0.000	0.000	0.013	0.000
Intuitive decision-making	Yes	0.102		0.002	0.007	-0.008	0.067
Optimism	Yes	0.454		-0.005	0.000	-0.005	0.000
Problem-Solving	Yes	0.325		-0.002	0.000	0.005	0.000
Rational decision making	Yes	0.003		-0.003	0.000	-0.004	0.028
Reality-testing	Yes	0.304		-0.003	0.000	0.003	0.000
Self-regard	Yes	0.000		0.002	0.000	0.006	0.000
Self-actualization	Yes	0.257		-0.001	0.000	0.001	0.000
Assertiveness	Yes	0.087		-0.004	0.000	-0.004	0.000
Social Responsibility	Yes	0.000		-0.007	0.001	0.006	0.006
Empathy	Yes	0.408		-0.004	0.432	0.010	0.878
Stress Tolerance	Yes	0.000		-0.002	0.000	0.007	0.000

In Table 3, the researcher examined the potential for conducting a multi-group analysis of the MICOM method using the Permutation test by assessing the similarity of means and variances across groups. The first step involved verifying whether the same indicators were used for both groups, which was confirmed. In the second phase, only the factors associated with Rational decision-making, Self-actualization, Social Responsibility, and comprising stress tolerance did not fulfill the requirements, showing a notable

Permutation p-value. Moving on to the third step, the researcher examined the equality of means and variances across groups for the variables, and because some variables showed discrepancies, the researcher utilized the WELCH-SATTERHWAITE test in PLS software to analyze the path relationships between the variables. Following the model run, the researcher assessed the path coefficients and p-value between the research variables in Table 4. For this study, the researcher set the bootstrap value to 5000.

**Table 4**

*Standard research coefficients*

Path between variables	Path (Boy)	p-value (Boy)	Path (Girl)	p-value (Girl)	Difference (Boy - Girl)	p-value (Boy vs Girl)	Result
Avoidance decision making -> Action for personal growth	-0.132	0.179	0.093	0.164	-0.225	0.050	rejection
Avoidance decision making -> Emotional self-awareness	0.198	0.163	-0.099	0.462	0.298	0.124	rejection
Avoidance decision making -> Independence	-0.026	0.607	-0.061	0.564	0.035	0.736	rejection
Avoidance decision making -> Flexibility	0.108	0.347	-0.179	0.055	0.287	0.054	rejection
Avoidance decision making -> Happiness	-0.060	0.253	0.145	0.299	-0.205	0.173	rejection
Avoidance decision making -> Impulse control	-0.038	0.849	-0.004	0.977	-0.034	0.861	rejection
Avoidance decision making -> Interpersonal relationships	0.001	0.990	-0.235	0.019	0.236	0.042	confirmation
Avoidance decision making -> Optimism	-0.134	0.314	-0.063	0.601	-0.071	0.677	rejection
Avoidance decision making -> Problem Solving	0.013	0.835	-0.003	0.983	0.016	0.912	rejection
Avoidance decision making -> Reality testing	-0.023	0.631	-0.167	0.195	0.144	0.294	rejection
Avoidance decision making -> Self-Regard	0.163	0.036	-0.246	0.044	0.409	0.008	confirmation
Avoidance decision making -> Self-actualization	-0.021	0.865	-0.094	0.416	0.073	0.673	rejection
Avoidance decision making -> Assertiveness	-0.216	0.088	-0.046	0.660	-0.170	0.297	rejection
Avoidance decision making -> Social Responsibility	-0.057	0.675	-0.106	0.363	0.048	0.794	rejection

Avoidance decision making -> Empathy	0.039	0.518	-0.137	0.226	0.175	0.163	rejection
Avoidance decision making -> Stress Tolerance	0.058	0.351	0.100	0.450	-0.042	0.785	rejection
Dependent decision making -> Action for personal growth	0.102	0.417	0.032	0.654	0.071	0.605	rejection
Dependent decision making -> Emotional self-awareness	0.148	0.207	0.127	0.193	0.021	0.892	rejection
Dependent decision making -> Independence	0.226	0.000	0.120	0.386	0.106	0.492	rejection
Dependent decision making -> Flexibility	0.404	0.000	0.259	0.077	0.144	0.403	rejection
Dependent decision making -> Happiness	0.176	0.006	-0.021	0.878	0.196	0.181	rejection
Dependent decision making -> Impulse control	0.013	0.895	-0.166	0.156	0.179	0.237	rejection
Dependent decision making -> Interpersonal relationships	0.143	0.031	-0.039	0.794	0.181	0.259	rejection
Dependent decision making -> Optimism	0.446	0.000	0.078	0.406	0.369	0.007	confirmation
Dependent decision making -> Problem Solving	0.173	0.008	-0.229	0.017	0.402	0.001	confirmation
Dependent decision making -> Reality testing	0.241	0.000	0.161	0.254	0.080	0.602	rejection
Dependent decision making -> Self regard	0.176	0.011	-0.265	0.004	0.441	0.000	confirmation
Dependent decision making -> Self-actualization	0.011	0.908	0.166	0.111	-0.155	0.267	rejection
Dependent decision making -> Assertiveness	0.097	0.458	0.139	0.196	-0.042	0.801	rejection
Dependent decision making -> Social Responsibility	-0.066	0.496	0.116	0.167	-0.183	0.153	rejection
Dependent decision making -> Empathy	0.174	0.006	0.164	0.050	0.010	0.927	rejection
Emotional self-awareness -> Action for personal growth	0.060	0.570	0.098	0.508	-0.039	0.818	rejection
Independence -> Action for personal growth	-0.553	0.592	-0.013	0.850	-0.539	0.546	rejection
Flexibility -> Action for personal growth	-0.200	0.123	0.054	0.378	-0.254	0.074	rejection
Happiness -> Action for personal growth	-0.608	0.089	-0.131	0.063	-0.477	0.148	rejection
Impulse control -> Action for personal growth	0.013	0.848	0.014	0.823	-0.001	0.992	rejection
Spontaneous decision making -> Action for personal growth	-0.088	0.491	0.044	0.475	-0.132	0.340	rejection
Spontaneous decision making -> Emotional self-awareness	-0.218	0.137	-0.194	0.188	-0.025	0.906	rejection
Spontaneous decision making -> Independence	-0.467	0.000	0.047	0.653	-0.515	0.000	confirmation
Spontaneous decision making -> Flexibility	-0.413	0.002	0.142	0.142	-0.555	0.002	confirmation
Spontaneous decision making -> Happiness	-0.515	0.000	-0.260	0.038	-0.255	0.074	rejection
Spontaneous decision making -> Impulse control	-0.025	0.871	0.028	0.841	-0.052	0.794	rejection
Spontaneous decision making -> Interpersonal relationships	-0.506	0.000	-0.070	0.419	-0.436	0.000	confirmation
Spontaneous decision making -> Optimism	0.029	0.818	-0.315	0.014	0.343	0.056	rejection
Spontaneous decision making -> Problem Solving	-0.505	0.000	-0.037	0.774	-0.468	0.003	confirmation
Spontaneous decision making -> Reality testing	-0.468	0.000	0.031	0.726	-0.499	0.000	confirmation
Spontaneous decision making -> Self regard	-0.379	0.000	-0.115	0.228	-0.264	0.067	rejection
Spontaneous decision making -> Self-actualization	0.200	0.087	-0.261	0.047	0.460	0.011	confirmation
Spontaneous decision making -> Assertiveness	0.255	0.059	-0.263	0.034	0.518	0.007	confirmation
Spontaneous decision making -> Social Responsibility	0.116	0.400	-0.185	0.144	0.301	0.113	rejection
Spontaneous decision making -> Empathy	-0.471	0.000	-0.270	0.021	-0.201	0.135	rejection
Spontaneous decision making -> Stress Tolerance	-0.510	0.000	-0.107	0.401	-0.404	0.011	confirmation
Interpersonal relationships -> Action for personal growth	0.039	0.943	0.063	0.297	-0.024	0.952	rejection
Intuitive decision making -> Action for personal growth	0.213	0.015	0.032	0.725	0.180	0.149	rejection
Intuitive decision making -> Emotional self-awareness	-0.208	0.051	0.294	0.012	-0.502	0.003	confirmation
Intuitive decision making -> Independence	0.176	0.001	0.255	0.069	-0.079	0.588	rejection
Intuitive decision making -> Flexibility	-0.062	0.475	0.040	0.743	-0.102	0.489	rejection
Intuitive decision making -> Happiness	0.126	0.028	-0.048	0.689	0.174	0.189	rejection
Intuitive decision making -> Impulse control	0.150	0.313	-0.143	0.234	0.293	0.137	rejection
Intuitive decision making -> Interpersonal relationships	0.110	0.055	-0.151	0.173	0.261	0.040	confirmation
Intuitive decision making -> Optimism	0.118	0.136	0.391	0.000	-0.273	0.041	confirmation
Intuitive decision making -> Problem Solving	0.122	0.033	0.002	0.989	0.120	0.391	rejection
Intuitive decision making -> Reality testing	0.178	0.000	-0.032	0.813	0.211	0.150	rejection
Intuitive decision making -> Self regard	-0.025	0.726	-0.268	0.012	0.243	0.060	rejection
Intuitive decision making -> Self-actualization	-0.249	0.007	0.267	0.019	-0.515	0.001	confirmation
Intuitive decision making -> Assertiveness	-0.073	0.506	0.412	0.000	-0.484	0.003	confirmation
Intuitive decision making -> Social Responsibility	-0.122	0.256	0.184	0.091	-0.306	0.051	rejection
Intuitive decision making -> Empathy	0.134	0.017	0.363	0.001	-0.228	0.063	rejection
Intuitive decision making -> Stress Tolerance	0.135	0.014	0.282	0.013	-0.147	0.247	rejection
Optimism -> Action for personal growth	0.079	0.360	0.396	0.098	-0.318	0.210	rejection
Problem Solving -> Action for personal growth	0.329	0.270	-0.028	0.686	0.358	0.230	rejection
Rational decision making -> Action for personal growth	0.599	0.001	-0.159	0.009	0.758	0.000	confirmation
Rational decision making -> Emotional self-awareness	-0.054	0.767	0.179	0.070	-0.233	0.260	rejection
Rational decision making -> Independence	0.382	0.000	0.208	0.012	0.174	0.105	rejection
<b>Rational decision making -&gt; Flexibility</b>	<b>-0.000</b>	<b>0.997</b>	<b>0.245</b>	<b>0.038</b>	<b>-0.246</b>	<b>0.142</b>	rejection
Rational decision making -> Happiness	0.322	0.000	-0.131	0.296	0.453	0.002	confirmation
Rational decision making -> Impulse control	-0.126	0.543	0.173	0.128	-0.299	0.216	rejection
Rational decision making -> Interpersonal relationships	0.380	0.000	0.191	0.126	0.189	0.189	rejection
Rational decision making -> Optimism	-0.288	0.009	0.074	0.428	-0.362	0.010	confirmation

Rational decision making -> Problem Solving	0.381	0.000	0.133	0.236	0.248	0.065	rejection
Rational decision making -> Reality testing	0.378	0.000	0.118	0.336	0.260	0.066	rejection
Rational decision making -> Self regard	0.579	0.000	0.234	0.032	0.345	0.020	confirmation
Rational decision making -> Self-actualization	0.675	0.000	0.116	0.239	0.559	0.002	confirmation
Rational decision making -> Assertiveness	-0.096	0.585	-0.043	0.653	-0.053	0.790	rejection
Rational decision making -> Social Responsibility	0.346	0.021	0.048	0.620	0.298	0.110	rejection
Rational decision making -> Empathy	0.434	0.000	0.116	0.195	0.319	0.008	confirmation
Rational decision making -> Stress Tolerance	0.449	0.000	0.248	0.009	0.201	0.096	rejection
Reality testing -> Action for personal growth	0.695	0.526	0.024	0.698	0.671	0.526	rejection
Self-Regard -> Action for personal growth	0.425	0.020	-0.145	0.141	0.570	0.007	confirmation
Self-actualization -> Action for personal growth	-0.013	0.876	0.132	0.471	-0.145	0.459	rejection
Assertiveness -> Action for personal growth	0.010	0.896	0.052	0.788	-0.042	0.855	rejection
Social Responsibility -> Action for personal growth	0.118	0.089	-0.062	0.502	0.180	0.121	rejection
Empathy -> Action for personal growth	-0.284	0.535	0.399	0.023	-0.683	0.140	rejection
Stress Tolerance -> Action for personal growth	-0.085	0.826	-0.057	0.435	-0.028	0.916	rejection

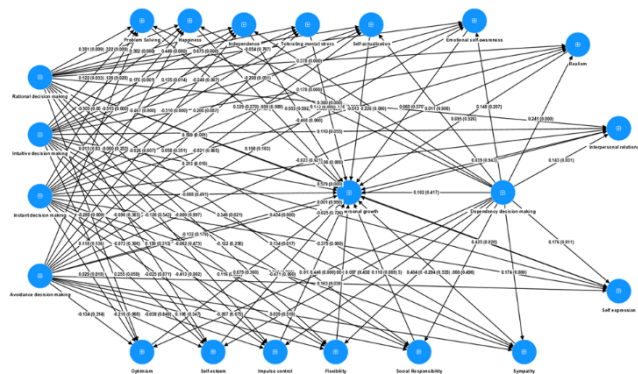


Fig 2: Path coefficients between variables and P-value in the men's group

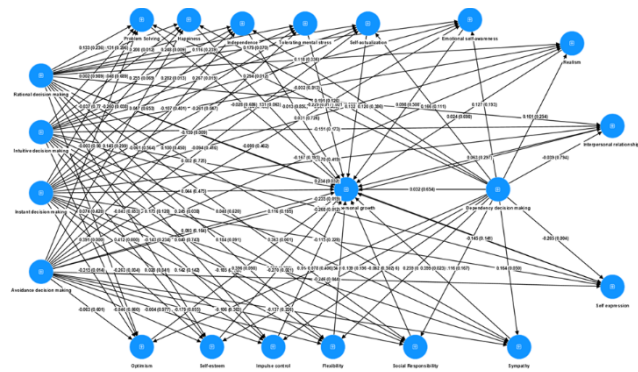


Fig 3: Path coefficients between variables and P-value in the Female group

Based on the data presented in Table 4 and Figures 2 and 3, the decision-making factor of Avoidance exhibited a significant negative impact on Interpersonal relationships ( $\beta = -0.235$ ,  $p = 0.019$ ). A notable difference was found in multi-group analysis when comparing men and women, with women showing notable significance ( $p$  (Boy vs Girl) = 0.042). This impact was only observed in the female group, with Avoidance decision-making negatively influencing self-regard ( $\beta = -0.246$ ,  $p = 0.044$ ), while having a positive effect in the male group. The multi-group analysis further highlighted a significant contrast between men and women in this aspect ( $p$  (Boy vs Girl) = 0.008).

The Dependent decision-making factor also had a strong positive influence on Optimism among male participants.

When comparing the two groups of men and women through multi-group analysis, there was a significant difference in this aspect ( $p$  (Boy vs Girl)=0.007), with this factor only affecting the male group. In addition, the dependent decision-making variable had a direct positive and significant effect on problem-solving in the male group ( $\beta=0.173$ ,  $p=0.008$ ), whereas it hurt the female group. Through multi-group analysis, the difference between the male and female groups in this regard was significant ( $p$  (Boy vs Girl) = 0.001). Moreover, the Dependent factor had a notable positive effect on self-regard among males ( $\beta=0.176$ ,  $p=0.011$ ), whereas it had a detrimental impact on females ( $\beta=-0.265$ ,  $p=0.004$ ). The multi-group analysis between the two genders showed a significant difference in this aspect ( $p$  (Boy vs Girl) = 0.000).



Similarly, the factor of spontaneous decision-making has a strong negative impact on Independence ( $\beta = -0.467$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.000), Flexibility ( $\beta = -0.413$ ,  $p = 0.002$ ,  $p$  (Boy vs. Girl) = 0.002), and Interpersonal relationships ( $\beta = -0.506$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.000), Problem-Solving ( $\beta = -0.505$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.003), Reality testing ( $\beta = -0.468$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.000), and Stress Tolerance ( $\beta = -0.510$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.011) among males. However, this factor did not have a significant impact on females. On the other hand, the spontaneous decision-making factor negatively affects Self-actualization ( $\beta = -0.261$ ,  $p = 0.047$ ,  $p$  (Boy vs. Girl) = 0.011) and Assertiveness ( $\beta = -0.263$ ,  $p = 0.034$ ,  $p$  (Boy vs. Girl) = 0.007) only in females, showing a significant difference between genders.

Furthermore, the Intuitive decision-making factor shows a positive impact on Emotional self-awareness ( $\beta = 0.294$ ,  $p = 0.012$ ,  $p$  (Boy vs. Girl) = 0.003), Optimism ( $\beta = 0.391$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.041), and Assertiveness ( $\beta = 0.412$ ,  $p = 0.000$ ,  $p$  (Boy vs. Girl) = 0.003) specifically in females, with no significant impact on males. Additionally, in the female group, the Intuitive decision-making factor has a positive effect on Self-actualization ( $\beta = 0.267$ ,  $p = 0.019$ ), shows a negative impact in the male group ( $\beta = -0.249$ ,  $p = 0.007$ ), indicating a significant difference between men and women in terms of this variable. The results of the multi-group analysis further support this distinction ( $p$  (Boy vs. Girl) = 0.001).

**Table 5**

*Indirect effects between research variables*

Path between variables	Difference (Boy - Girl)	p-value (Boy vs Girl)	Result
Rational decision making -> Self-Regard -> Action for personal growth	0.280	0.011	confirmation
Spontaneous decision-making -> Self-Regard -> Action for personal growth	-0.178	0.020	confirmation
Rational decision making -> Happiness -> Action for personal growth	-0.213	0.045	confirmation

Based on the findings in Table 5, it can be observed that Rational decision-making positively and significantly influenced Action for personal growth through the Self-regard variable (Difference = 0.280,  $P = 0.011$ ). An interpretation of the data suggests that the Self-regard variable may act as a mediator in the group of men, leading to an increase in Action for personal growth among men. Conversely, according to Table 5, Spontaneous decision-making had a negative and significant impact on Action for

**Table 6**

*The coefficient of determination of the model*

Variables	Boy		Girl	
	R <sup>2</sup>	R-square adjusted	R <sup>2</sup>	R-square adjusted
Action for personal growth	0.738	0.659	0.856	0.815
Emotional self-awareness	0.092	0.036	0.361	0.324
Independence	0.799	0.786	0.191	0.143
Flexibility	0.313	0.271	0.202	0.155
<b>Happiness</b>	<b>0.755</b>	<b>0.740</b>	<b>0.058</b>	<b>0.003</b>

In the same way, the variable Rational decision-making has a positive and significant impact on Personal growth action in the male group ( $\beta = 0.599$ ,  $p = 0.001$ ) and a negative and significant impact in the female group ( $\beta = -0.159$ ,  $p = 0.009$ ). Following the comparison between the two groups, the disparity in this aspect was deemed significant ( $p$  (Male vs. Female) = 0.000). Additionally, Rational decision-making has a positive and significant direct effect on self-regard in the male group ( $\beta = 0.579$ ,  $p = 0.000$ ,  $p$  (Male vs. Female) = 0.020) and a negative and significant impact in the female group ( $\beta = 0.234$ ,  $p = 0.032$ ,  $p$  (Male vs. Female) = 0.020), with a more pronounced impact in the male group (Difference (Male-Female) = 0.345).

Similarly, Rational decision-making has a positive and significant direct impact on Happiness ( $\beta = 0.322$ ,  $p = 0.000$ ,  $p$  (Male vs. Female) = 0.002), Self-actualization ( $\beta = 0.675$ ,  $p = 0.000$ ,  $p$  (Male vs. Female) = 0.002), Empathy ( $\beta = 0.434$ ,  $p = 0.000$ ,  $p$  (Male vs. Female) = 0.008), and a significant negative effect on Optimism ( $\beta = -0.288$ ,  $p = 0.009$ ,  $p$  (Male vs. Female) = 0.010) exclusively in the male group. Furthermore, the Self-Regard variable showed a positive and significant direct impact on Personal growth action ( $\beta = 0.425$ ,  $p = 0.020$ ,  $p$  (Male vs. Female) = 0.007) only in the male group. Finally, the researcher utilized the bootstrap method to explore the indirect impact of the study variables.

personal growth via the Self-regard variable (Difference = -0.178,  $P = 0.020$ ), as well as through the Happiness variable (Difference = -0.213,  $P = 0.045$ ). A negative gap between the genders suggests that spontaneous decision-making could result in a lower level of drive for personal growth in women. Moreover, the researcher assessed the coefficient of determination of endogenous variables in the study discussed in Chapter 6.

Impulse control	0.026	-0.034	0.072	0.017
Interpersonal relationships	0.735	0.718	0.132	0.081
Optimism	0.231	0.184	0.433	0.400
Problem-Solving	0.746	0.730	0.056	0.001
Reality testing	0.805	0.793	0.076	0.022
Self-Regard	0.662	0.641	0.282	0.240
Self-actualization	0.354	0.314	0.368	0.331
Assertiveness	0.071	0.014	0.378	0.341
Social Responsibility	0.108	0.053	0.185	0.137
Empathy	0.756	0.741	0.508	0.479
Stress Tolerance	0.736	0.723	0.182	0.144

The researcher checked the reliability and validity of the research model in Table 7.

**Table 7**

*Reliability and validity of the model*

Variables	Cronbach's Alpha	Composite Reliability	AVE
Action for personal growth	0.811	0.869	<b>0.571</b>
Avoidant decision making	0.884	0.910	<b>0.592</b>
Dependent decision making	0.930	0.944	<b>0.707</b>
Emotional self-awareness	0.860	0.895	<b>0.588</b>
Independent	0.735	0.834	<b>0.558</b>
<b>Flexibility</b>	<b>0.885</b>	<b>0.905</b>	<b>0.75</b>
Happiness	0.894	0.912	<b>0.60</b>
Impulse control	0.834	0.876	<b>0.504</b>
Spontaneous decision making	0.759	0.837	<b>0.512</b>
Interpersonal relationships	0.887	0.929	<b>0.815</b>
Intuitive decision making	0.804	0.856	<b>0.592</b>
Optimism	0.752	0.769	<b>0.529</b>
Problem-Solving	0.766	0.836	<b>0.787</b>
Rational decision making	0.720	0.826	<b>0.543</b>
Reality testing	0.763	0.835	<b>0.814</b>
Self-Regard	0.715	0.800	<b>0.707</b>
Self-actualization	0.746	0.809	<b>0.586</b>
Assertiveness	0.740	0.836	<b>0.560</b>
Social Responsibility	0.723	0.828	<b>0.548</b>
Empathy	0.795	0.859	<b>0.551</b>
Stress Tolerance	0.816	0.863	<b>0.865</b>

Table 7 displays the confirmation of the model's reliability and validity. The variables' Cronbach's alpha reliability exceeds 0.7, as does the combined reliability of these variables. The model's accuracy was also evaluated by utilizing the average variance extracted index, whose value exceeded 0.5 for the variables under study, thus confirming the model's validity. Furthermore, the model's fit was examined, with all fit indices confirming its accuracy. The SRMR, or Standardized Root Mean Square Residual Index, which measures the disparity between the observed correlation and the structural model's correlation matrix, was determined to be 0.246 for the model.

#### 4. Discussion and Conclusion

The primary goal of this research was to investigate the connection between decision-making styles and personal growth, with emotional intelligence serving as a mediating factor for both men and women involved in the study. The

study results showed that women who engage in avoidant decision-making experience a decrease in interpersonal relationships and self-regard, while men exhibit an increase in self-regard. Dependent decision-making resulted in higher levels of optimism, problem-solving, and self-regard in men while decreasing these factors in women. Men experience a reduction in independence, flexibility, interpersonal relationships, problem-solving skills, reality testing, and stress tolerance with spontaneous decision-making, while women experience a decline in self-actualization and Assertiveness. Intuitive decision-making led to increased emotional self-awareness, self-actualization, optimism, and Assertiveness among women while producing the opposite outcome for men. Rational decision-making prompted action for personal growth, self-regard, happiness, self-actualization, and the expression of empathy in men while decreasing optimism. In women, rational decision-making reduces action for personal growth and self-regard. "Moreover, self-regard had a moderating effect on men,

resulting in them taking more steps towards personal growth. In contrast, spontaneous decision-making stemming from self-regard and happiness caused a decrease in women's drive for personal growth."

Research has examined how decision-making styles affect different aspects of emotional intelligence. While direct studies examining all decision-making styles on emotional intelligence components are limited, previous research suggests a consistent relationship with the present research (Özgenel, 2018; Pavai et al., 2021; Magnano et al., 2015; Ibrahim & Elsabahy, 2020). One study indicated a positive correlation between decision-making and self-actualization (Pavai et al., 2021). A different research study discovered that optimism is connected to successful decision-making and is inversely related to unsuccessful decision-making (Magnano et al., 2015). Moreover, studies indicated that individuals who exhibit rational and avoidant decision-making tendencies tend to possess strong problem-solving skills (Özgenel, 2018). Another study identified a significant correlation between emotional intelligence and decision-making style (Ibrahim & Elsabahy, 2020).

Decision-making is a problem-solving process that concludes with finding a satisfactory solution. Individuals who frequently make risky decisions tend to choose options that provide immediate rewards, even if they carry a high level of risk, rather than selecting safer long-term solutions. Individuals who have avoidant and dependent decision-making styles tend to delay making decisions, which can result in accumulating stressful and unsolvable situations. This may ultimately decrease their assertiveness and interpersonal relationships (Hosseini et al., 2023). On the other hand, the rational decision-making style involves the decision-maker's desire to explore all potential solutions, assess the outcomes of each solution comprehensively, and ultimately select the most optimal and favorable solution when faced with decision-making scenarios. This approach can drive personal growth, self-regard, happiness, self-actualization, and the ability to empathize. In contrast, the dependent decision-making style indicates a lack of intellectual independence in the decision-maker's actions, relying heavily on the guidance and support of others when making decisions. Individuals who exhibit an avoidant decision-making style either avoid making a decision entirely, anticipating that the problem will resolve on its own, or use procrastination tactics like putting off tasks for a later date (Zaree & Nahravanian, 2018).

The intuitive decision-making style relies on emotions rather than thoughts to determine what is right. This approach can enhance emotional self-awareness, self-actualization, optimism, and assertiveness. People with this approach do not ignore analyzing problems but trust that in high-pressure situations filled with information, relying on intuition can aid in making quick and efficient decisions (Pornoshadi & Parvizian, 2020). The impact of decision-making styles on girls and boys may differ due to rooted behavioral traits in girls and a preference for challenging experiences in boys (Hamidi Choolabi & Salehi, 2023). Personality can also influence decision-making styles, leading to varying

decisions in similar situations based on individual differences (Pornoshadi & Parvizian, 2020).

Although no research specifically discusses how spontaneous decision-making based on emotional intelligence may result in reduced action for personal growth in women, the current study indicates that emotional intelligence plays a crucial role in increasing action for personal growth in men, consistent with earlier research findings (El Othman et al., 2020; Wischerth et al., 2016). Previous studies have highlighted the importance of emotional intelligence as a mediator between personality traits and decision-making styles (El Othman et al., 2020). A study has indicated that variations in emotional intelligence among individuals can forecast an enhancement in personal growth, highlighting a favorable correlation between these factors (Wischerth et al., 2016).

Emotional intelligence refers to a type of intelligence that involves the ability to comprehend and control one's emotions to make informed decisions in life. It also involves effectively regulating emotions, controlling impulses, and delaying gratification. Furthermore, emotional intelligence includes the capacity to understand and develop solid connections with others. People with high emotional intelligence are better equipped to handle psychological stress and pressure. This type of intelligence enables individuals to be self-aware, understand themselves and others, and effectively manage strong emotions to make appropriate decisions and foster personal growth (Rahimi Ahmadabadi et al., 2021).

Adololscents develop comprehensively through emotional skills, thus enhancing their personality and assertiveness. This enables them to effectively regulate their emotions, solve problems, and make decisions (Portela-Pino et al., 2022). Research suggests that while girls may have higher levels of emotional intelligence than boys, they often underestimate their emotional abilities, whereas boys tend to overestimate theirs. Women are more attentive to emotions, while men excel in emotional regulation. This disparity in emotional understanding may also impact decision-making styles and outcomes in adolescents (Portela-Pino et al., 2022; D'Amico & Geraci, 2022).

Obtaining consent from participants was a challenge in this study because some participants did not perceive any personal benefits in taking part and completing questionnaires. The abundance of surveys and the lengthy evaluation process made participants tired and less focused, despite efforts to mitigate this by allowing ample time. Additionally, the lack of control over variables like economic status and cultural influences could impact the research outcomes, highlighting the need for studies that account for these factors. Using self-report scales in the study may have led to biased responses and inaccuracies, but participants were assured of data confidentiality and group analysis to address this concern. Another limitation was the unique nature of the research topic, making it difficult to compare findings with previous studies, underscoring the importance of future research with diverse age groups and larger sample sizes for more comprehensive results.

Based on the results of this study, it was noted that the decision-making styles play a role in their emotional intelligence, showing differences between the genders. The study results indicated that the spontaneous decision-making pattern diminishes emotional intelligence components in both genders and rational decision-making plays a significant role in the personal growth of participants. Emotional intelligence also acts as a mediator, leading to increased personal growth initiative in boys and decreased in girls. Given that specific decision-making styles can enhance or diminish emotional intelligence in adolescents, it is crucial to create opportunities for teaching these skills and implementing interventions to help young individuals navigate stressful situations and make conscious decisions. Improving decision-making styles and making lifestyle modifications are recommended to enhance Happiness, Assertiveness, Problem-solving skills, self-regard, and other components. This can be achieved through educational and therapeutic interventions in schools and universities to address these issues.

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