Decision Making Competencies among Higher Secondary School Students: An Empirical Investigation

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Abstract: Decision-making constitutes a pivotal life competency that significantly influences both the personal and professional trajectories of individuals. This investigation explores the decision-making competencies of higher secondary school students, emphasizing the effects of gender, field of study, educational institution type, and geographical region. A total of 200 students were surveyed across six educational institutions, which included 81 males and 119 females from both Arts and Science disciplines, enrolled in government, aided, and private schools situated in both rural and urban environments. Descriptive and inferential statistical methodologies, including t-tests and ANOVA, were utilized to assess variations in decision-making competencies in relation to demographic and institutional variables. The results reveal no statistically significant differences in decision-making competencies when analyzed by gender, field of study, or regional categorization. Nonetheless, subtle discrepancies were noted, with urban students exhibiting marginally higher mean scores relative to their rural counterparts and students from the Arts stream slightly surpassing those from the Science stream. The findings imply that although demographic and institutional factors do not exert a significant influence on decision-making competencies, targeted interventions aimed at enhancing these skills could prove beneficial for students across all classifications. This research underscores the necessity of incorporating decision-making training into educational curricula to adequately equip students for the complexities of real-world challenges.

Keywords: Decision-making skills, higher secondary students, gender, stream of study, school type, rural, urban.

Introduction

Decision-making competencies among higher secondary school students are paramount as they confront substantial life choices, including vocational trajectories and educational pathways. These competencies are shaped by a multitude of factors, such as cognitive adaptability, parental aspirations, peer guidance, and pedagogical interventions. Analysing these determinants can assist educators and policymakers in formulating effective methodologies to bolster students' decision-making proficiencies. Empirical evidence suggests that cognitive adaptability and perceived parental aspirations serve as significant predictors of vocational decision-making amongst higher secondary students. A particular investigation revealed that 97% of students exhibited indecisiveness regarding their vocational choices, underscoring the necessity for support in this domain. The research also indicated that decision-making competencies differed markedly across varied family structures, implying that familial dynamics contribute to the development of these competencies (Gayathri & Sabu, 2024). Peer guidance has been demonstrated to markedly improve decision-making skills. An investigation utilizing a pretest-posttest framework illustrated that students engaged in peer mentoring displayed substantial enhancements in their decision-making capabilities relative to their counterparts who did not participate, as evidenced by a notable mean difference and considerable effect size (Devi & Usha, 2014). Critical thinking is intricately associated with decision-making competencies. A study focusing on adolescents in Kolkata indicated that decision-making exerts a significant influence on critical thinking, accounting for 14.3% of its variability. This finding implies that the promotion of critical thinking may simultaneously augment decision-making skills (Mondal & Mallick, 2024). A particular study identified various decision-making styles prevalent among high school students, including dependent, avoidant, confident, rational, and intuitive styles. These styles were responsible for 53.67% of the variance in decision-making competencies, reflecting the diversity of approaches among students (Nehass et al., 2024). There exists a noteworthy correlation between decision-making skills and behavioural management. Students exhibiting higher decision-making competencies tend to demonstrate superior behavioural management, suggesting that the enhancement of decision-making abilities can have a favourable effect on overall student behaviour (Abdullah & Rahman, 2020). The present study will investigate demographic variables such as gender, type of school, type of course, and region, which may elucidate the decision-making, processes in higher secondary school students.

Tools design

Decision-Making Skills Questionnaire developed by the investigator and the supervisor. The question has developed based on literature; Bala *et al.*, (2017); Delaney *et al.*, (2015); Noor Mohamed Abdinoor. (2020); it can help in framing questions that assess the different approach students take when making decisions. Totally 35 questions were designed and ensuring the connections with dimension of Rational, Intuitive,

Dependent, Avoidant. The investigator consulted with supervisor, Literature, Psychologist and Educationalist in order to check the relevant of the scale according to the dimensions. Finally, we have selected for 20 questions according to the validity and reliability of pilot study.

Population

Total 200 students constituted population of the studying district of Tiruppur, Tamil Nadu. India. The sample of this study Government School, Government Aided School and Private School. Total no. of population 6, for each school minimum 20 students and maximum 35 students were selected by simple random sample method. The correlation of demographic data etc., Gender: Boys & Girls; Stream: Arts & Science; Type of School: Government, Aided, Private; Region: Rural & Urban.

Hypothesis

H_1: There is no significant difference in Decision Making Skills between male and female students.

H_2: There is no significant difference in Decision Making Skillsfor Arts and Science stream.

H_3: There is no significant difference in Decision Making Skills among students from different types of schools etc. Government, Aided, and Private school.

H_4: There is no significant difference in Decision Making Skills between rural and urban students.

Data analysis

In order to investigate the characteristics of test score distributions, descriptive statistics like mean, median, and standard deviation were being used. T-test was used to determine the significance of the difference in social competence and self-esteem among male and female students. To investigate the diverse education institutions used one way ANOVA of between and within a group of Significance. All the studies was incorporate to IBM SPSS Statistics Version 27.

Data interpretation and discussion

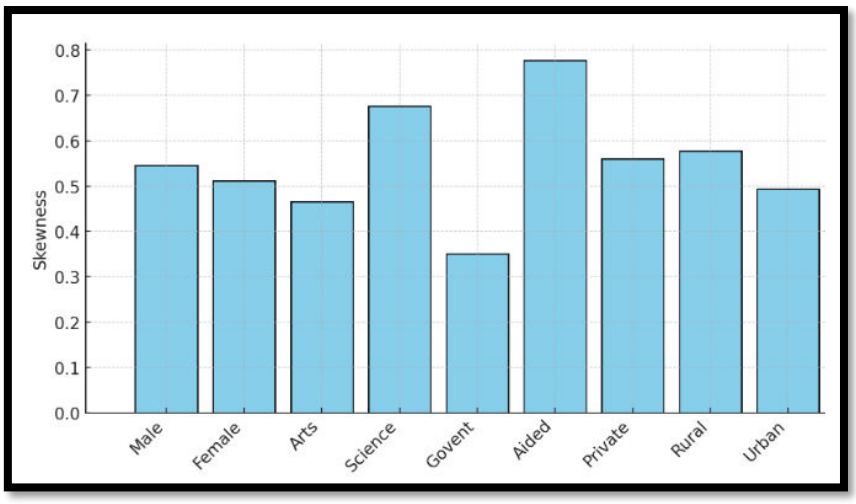
The current investigation encompassed a comprehensive total of 200 samples procured from six distinct educational institutions. The demographic composition of the sample comprised 81 males and 119 females. In terms of academic stream, 128 students were identified as belonging to the Arts stream, while 72 were classified within the Science stream. The categorization of the educational institutions was delineated into government schools (65 students), aided schools (40 students), and private schools (95 students). Furthermore, the geographical distribution of the sample was stratified into two divisions: rural (142 students) and urban (58 students).The Cronbach's alpha value has excellent in all the parameters >0.9. (Table:1)

Table 1: Demographical data of Decision-making skills in Higher Secondary School Students

Items	Category	No. of Sample	Mean	Std. Deviation	Cronbach's Alpha
Gender	Male	81	2.5802	1.09427	0.986
	Female	119	2.6202	1.25955	0.979
Stream	Arts	128	2.7059	1.19332	0.988
	Science	72	2.4229	1.17805	0.990
Type of School	Government	65	2.6369	1.26245	0.991
	Aided	40	2.4463	1.00966	0.984
	Private	95	2.6479	1.22068	0.989
Region	Rural	142	2.5465	1.23193	0.990
	Urban	58	2.7448	1.08792	0.986
Variables	Rational	200	2.5940	1.28382	0.987
	Intuitive	200	2.5630	1.17136	0.940
	Dependent	200	2.6040	1.21729	0.954
	Avoidant	200	2.6550	1.19310	0.953

The skewness statistic serves as a critical tool for assessing the symmetry of data distributions within each demographic group. Male (Skewness = 0.546, Std. Error = 0.267): The observed skewness is positive, indicating a marginal rightward skew. Nevertheless, the value is relatively proximate to 0, signifying that the distribution is almost symmetric. Female (Skewness = 0.512, Std. Error = 0.222): In a manner analogous to the male cohort, this group also exhibits a slight rightward skew, with the skewness value nearing 0, thereby suggesting a condition of near symmetry. Arts (Skewness = 0.466, Std. Error = 0.214): The distribution demonstrates a minor rightward skew; however, the value is closer to 0, indicating an approximate symmetric nature. Science (Skewness = 0.676, Std. Error = 0.283): This cohort displays a moderate rightward skew, implying a discernible level of asymmetry. Government (Skewness = 0.351, Std. Error = 0.297): The skewness is positive, yet it remains very close to 0, thus indicating a distribution that is nearly symmetric. Aided (Skewness = 0.777, Std. Error = 0.374): This group reveals a significant rightward skew, suggesting that higher values are less prevalent. Private (Skewness = 0.560, Std. Error = 0.247): The distribution exhibits a minor rightward skew, with values relatively near symmetry. Rural (Skewness = 0.578, Std. Error = 0.203): This cohort demonstrates a slight rightward skew, with a distribution that is approaching symmetry. Urban (Skewness = 0.493, Std. Error = 0.314): The distribution is slightly skewed to the right, analogous to the rural group (Figure:1).

Figure 1: Skewness test of Demographical data



Male and Female: The P-value is 0.8169 (> 0.05), which suggests that the discrepancy between male and female students lacks statistical significance. The Mean Difference is -0.0399, indicating that the mean score for males is marginally lower than that of females. The 95% Confidence Interval (CI) ranging from -0.3795 to 0.2997 encompasses zero, thereby reinforcing the absence of significance. Consequently, there is no statistically significant difference in decision-making capabilities between male and female students.

Arts and Science: The P-value is 0.1075 (> 0.05), which signifies that the variation between students in the arts and those in the science stream does not achieve statistical significance. The Mean Difference is 0.2829, suggesting that the mean score for arts students is slightly superior to that of their science counterparts. The 95% Confidence Interval (CI) spanning from -0.0621 to 0.6280 contains zero, indicating that the observed difference is not statistically significant. Therefore, there is no significant difference in decision-making skills between students in the arts and those in the science stream.

Rural and Urban: The P-value is 0.287 (> 0.05), indicating that the difference between students from rural and urban backgrounds lacks statistical significance. The Mean Difference is -0.1983, revealing that the mean score for rural students is somewhat lower than that of urban students. The Confidence Interval, specifically the 95% CI from -0.5647 to 0.1680, encompasses zero, thereby confirming the absence of significance. Thus, there is no significant difference in decision-making skills between rural and urban students.

One-way ANOVA is employed to analyze the means of distinct groups in order to ascertain whether statistically significant disparities exist among them. The data delineated herein assesses the decision-making styles (Rational, Intuitive, Dependent, and Avoidant) across various groups. The exceptionally high F-value for the Rational style (1041.92) coupled with a significant p-value (<0.001) signifies the existence of a statistically significant difference in rational decision-making scores across the groups.

The minimal within-groups variance (Mean Square = 0.007) implies that the groups exhibit distinct characteristics with respect to rational decision-making. The elevated F-value for the Intuitive style (482.498) and a significant p-value (<0.001) denote notable differences in intuitive decision-making scores among the groups. The within-group variance is marginally greater than that observed in rational decision-making, yet remains minimal, further substantiating the presence of differences among the groups. A high F-value for the Dependent style (307.85) accompanied by a significant p-value (<0.001) indicates substantial variation in dependent decision-making scores across the groups. The within-groups mean square (0.02) is slightly elevated relative to the previous decision-making styles, suggesting a marginal increase in variability within the groups. The F-value for the Avoidant style (159.62) along with a significant p-value (<0.001) also corroborates the differences in avoidant decision-making scores among the groups. Nevertheless, in comparison to the other styles, avoidant decision-making exhibits the highest within-group variance (Mean Square = 0.037), indicating that the scores associated with this style are more dispersed within the groups (Table;2).

Table 2: ANOVA test for Decision making skills variables from Higher Secondary School Students

Variables	Source	Sum of Squares	df	Mean Square	F	Sig
Rational	Between Groups	326.978	47	6.957	1041.92	<0.001
	Within Groups	1.015	152	0.007		
	Total	327.993	199			
Intuitive	Between Groups	271.228	47	5.771	482.498	<0.001
	Within Groups	1.818	152	0.012		
	Total	273.046	199			
Dependent	Between Groups	291.811	47	6.209	307.85	<0.001
	Within Groups	3.066	152	0.02		
	Total	294.877	199			
Avoidant	Between Groups	277.65	47	5.907	159.62	<0.001
	Within Groups	5.625	152	0.037		
	Total	283.275	199			

Summary and conclusion

The descriptive statistics and reliability assessments for various demographic classifications and decision-making variables are derived from a sample size of 200. The statistical measures encompass the count of samples, mean, standard deviation, and Cronbach's alpha reliability coefficient for each demographic category and variable. All categories and variables demonstrate high reliability, as evidenced by Cronbach's alpha values exceeding 0.9. The mean scores across all categories are relatively homogeneous, ranging from 2.42 to 2.74. The urban demographic and arts stream display marginally elevated mean scores in comparison to their respective counterparts. The standard

deviations reflect moderate variability within the dataset. Every group exhibits positive skewness, signifying a propensity towards higher scores. The skewness values are predominantly minimal and approximate to 0, indicating that the majority of distributions are nearly symmetric, with the exception of the Aided and Science groups, which exhibit moderate asymmetry. All decision-making styles reveal statistically significant differences among groups, as indicated by the p-values (<0.001).For all comparisons (Male vs. Female, Arts vs. Science, and Rural vs. Urban), the results suggest no statistically significant differences in decision-making skills based on the two-tailed p-values and confidence intervals. Rational decision-making demonstrates the most pronounced group differentiation (highest F-value and lowest within-group variance), succeeded by Intuitive, Dependent, and Avoidant styles. The Avoidant decision-making style presents the highest within-group variability, suggesting that this particular style is less consistent within groups relative to the others. This data elucidates that the decision-making styles exhibit significant differences across the analyzed groups, with rational decision-making being the most distinct and avoidant decision-making reflecting the highest variability within groups.

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