

# **A Comprehensive Analysis of the Determinants of Entrepreneurial Abilities Among Undergraduate Students in Bangladesh**

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## **Abstract**

This study examines the entrepreneurial abilities of undergraduate students in Bangladesh. It also explains how these abilities differ across various academic and demographic groups. Data were collected using a structured 8-item Entrepreneurial Ability Questionnaire. More than 3,000 students from four different educational institutions and various academic disciplines participated in the survey. Students were categorized by entrepreneurial knowledge, socio-economic class, gender, and parental background. Statistical analysis showed significant differences in self-perceived entrepreneurial abilities across demographic groups. Students with sound academic knowledge consistently demonstrated the highest entrepreneurial ability, while those with no academic exposure scored the lowest. Socio-economic class also showed meaningful differences, with upper-class students generally outperforming others, though middle- and lower-class students displayed relative strengths in several traits. Gender differences were modest, with males slightly scoring higher overall, while females excelled in specific abilities. Students from entrepreneurial families showed significantly higher scores across all traits, confirmed by Chi-square tests ( $p < 0.001$ ) for all four demographic dimensions, with small to moderate practical significance in effect sizes. Both education and their socio-demographic background influence entrepreneurial ability in students. This means factors like academic exposure, family income, gender, and family business experience all play a role. The findings show that students benefit when they receive proper guidance and learning opportunities in entrepreneurship. These results highlight the importance of offering targeted entrepreneurship education in universities. They also show the need for supportive policies that help young people become more prepared for entrepreneurial careers in Bangladesh.

## **Keywords**

Entrepreneurial Ability, Undergraduate Students, Socio-Demographic Factors, Entrepreneurship Education

## **1. Introduction**

Entrepreneurship is widely recognized as the process of identifying opportunities, mobilizing resources, and creating new ventures that generate economic and social value (Zahra & Wright, 2015). It involves a combination of innovation, risk-taking, and strategic decision-making, enabling individuals to transform ideas into sustainable enterprises (Ribeiro-Soriano & Kraus, 2018). In developing countries such as Bangladesh, entrepreneurship plays a particularly critical role in national progress (Sultana *et al.*, 2025). With a large youth population, limited formal employment opportunities, and a growing demand for innovation-driven economic activity, fostering entrepreneurial capacity is essential for reducing unemployment, accelerating economic diversification, and enhancing global competitiveness.

Undergraduate students represent a strategically important group for entrepreneurial development in Bangladesh. At this educational stage, students are at a formative period in their lives where attitudes, confidence, and career aspirations are shaped (Titus & Satata, 2025). Exposure to entrepreneurial thinking during this time can influence their future pathways, encourage self-employment, and empower them to contribute to national economic growth. Moreover, universities in Bangladesh have increasingly recognized their responsibility in nurturing capable graduates not only of seeking jobs but also of creating jobs.

Successful entrepreneurs commonly demonstrate a set of behavioral and cognitive traits, including self-starting ability, leadership skills, responsibility-taking, organizational competence, strong work ethics, sound decision-making, trustworthiness, and effective record-keeping (Baron, 2007). These traits are widely acknowledged in entrepreneurship literature as key predictors of entrepreneurial intention and performance. However, such traits do not develop in isolation; they are influenced by various factors such as academic exposure, socio-economic class, family entrepreneurial background, and gender (Malebana & Swanepoel, 2014; Anderson & Miller, 2003; Tarling *et al.*, 2016; Sullivan & Meek, 2012). Understanding the relationship between these factors and entrepreneurial ability is essential for designing educational programs and policy interventions that effectively nurture entrepreneurial capacity among young people.

In this context, statistical analysis plays a vital role in identifying patterns, associations, and differences across student groups. Methods such as mean-score comparisons, Chi-square tests, and effect-size measurements (e.g., Cramér's *V*) provide objective insights into how different demographic and academic variables shape entrepreneurial abilities. Such analytical approaches allow researchers to determine whether observed differences are meaningful, significant, and practically relevant.

### **1.1 Objectives**

The present research pursues two major objectives:

- (i) To investigate the entrepreneurial traits of undergraduate students in Bangladesh and how they differ by academic knowledge, socio-economic status, gender, and family entrepreneurial backgrounds.
- (ii) To evaluate the statistical significance and strength of association between demographic factors and entrepreneurial ability, enabling evidence-based recommendations for entrepreneurship education and policy development.

## **2. Methodology**

This research employed a cross-sectional quantitative survey design to examine how academic exposure, socio-economic class, gender, and family entrepreneurial background influence entrepreneurial abilities among undergraduate students in Bangladesh. The study used a structured entrepreneurial competency questionnaire and compared responses across multiple demographic and academic categories. Because the entrepreneurial ability scores were self-reported, they may be subject to biases such as social desirability, overconfidence, or cultural tendencies to rate oneself modestly or highly.

### **2.1 Study Setting and Participants**

A structured survey questionnaire was distributed among more than 3,000 undergraduate students enrolled in four educational institutions in Bangladesh—Khulna University of Engineering and Technology, BL College Khulna under the National University of Bangladesh, Khulna University, and the University of Dhaka. Data were collected over two months, from 20 March 2024 to 19 May 2024, and the respondents represented a wide range of academic disciplines, including engineering, business studies, and the arts. Owing to its size and institutional diversity, the sample was

considered sufficiently broad and representative to allow generalization of findings across the undergraduate student population in Bangladesh.

## 2.2 Classification Criteria

### 2.2.1 Academic Entrepreneurial Knowledge Levels

Students were categorized based on their academic exposure to entrepreneurship: (i) Sound knowledge: Completed at least one dedicated course on entrepreneurship in their undergraduate program. (ii) Little knowledge: Did not take a dedicated course but encountered entrepreneurship topics within another course. (iii) No knowledge: Had no academic exposure to entrepreneurship. This gradation allowed for evaluating how formal education influences self-perceived entrepreneurial abilities.

### 2.2.2 Socio-Economic Class (Income-Based)

The socio-economic background of students was classified using the official monthly family income brackets defined for the Bangladeshi context, where families earning below 12,900 BDT per month were categorized as lower class, those earning between 12,900 and 21,500 BDT as middle class, and those earning above 21,500 BDT as upper class. These income thresholds were adopted directly from Fidah *et al.* (2024).

### 2.2.3 Gender

Gender was included as a classification criterion to compare entrepreneurial ability between male and female students and examine whether any meaningful differences existed between the two groups.

### 2.2.4 Family Entrepreneurial Background

Students were further categorized into: (i) With entrepreneurial family background: At least one parent currently or previously engaged in entrepreneurial activity (business owner, self-employed, SME owner, etc.). (ii) Without entrepreneurial family background: Neither parent had entrepreneurial involvement.

## 2.3 Instrumentation

An 8-item Entrepreneurial Ability Questionnaire (Figure 1) was used to assess students' self-perceived entrepreneurial competencies. The items captured eight key behavioral constructs widely recognized in entrepreneurship literature: self-starter ability, leadership ability, responsibility-taking, organizational skills, work ethic, decision-making ability, trustworthiness, and record-keeping ability. Each item was rated on a three-point ordinal scale, where 3 indicated high ability, 2 indicated medium ability, and 1 indicated low ability. Prior to full-scale administration, the questionnaire was pilot tested to ensure clarity, content validity, and reliability, after which it was distributed to the study participants.

Entrepreneurial Qualities Assessment Form				
<b>Personal Information</b>				
Name: _____				
Date of Birth (DD/MM/YYYY): _____				
Name of the Institution: _____				
Academic Discipline: _____				
Annual Family Income: _____				
Parent's Current and Previous Occupation: _____				
<b>Gender:</b>				
<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other				
<b>Entrepreneurial Qualities Questionnaire</b>				
Please rate each question using the following scale: 1 = Low   2 = Moderate   3 = High				
Question No.	Question	1	2	3
Q1	Are you a self-starter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q2	Can you lead others?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q3	Can you take responsibilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4	How good an organizer are you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q5	How good a worker are you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q6	Can you make excellent decisions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q7	Are you trustworthy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q8	Can you keep records?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 1. Entrepreneurial Qualities Assessment Form Used in the Study

## 2.4 Data Collection Procedure

Questionnaires were distributed physically in classrooms and university common areas. Participation was voluntary and anonymous, and no incentives were provided. Respondents were briefed on the purpose of the study, assured confidentiality, and informed that they could withdraw at any time. Completed questionnaires were collected immediately to avoid missing data and ensure sample integrity.

## 2.5 Statistical Analysis

To examine differences in entrepreneurial ability across academic knowledge levels, socio-economic classes, gender groups, and parental entrepreneurial backgrounds, a series of descriptive and inferential statistical analyses were conducted. First, the Mean Entrepreneurial Ability Score for each of the eight entrepreneurial-ability items was calculated for every student group. These values were plotted using a line graph to visually compare item-level strengths and weaknesses among groups. Additionally, Overall Entrepreneurial Ability Scores—representing the aggregated average ability across all eight items—were computed for each group and presented in a bar chart to enable clear comparison of general entrepreneurial tendencies.

$$\text{Mean Entrepreneurial Ability Score} = \frac{3H + 2M + 1L}{H + M + L} \quad (1)$$

Where,

$H$  = total number of “High (3)” responses across all 8 questions

$M$  = total number of “Medium (2)” responses across all 8 questions

$L$  = total number of “Low (1)” responses across all 8 questions

$$\text{Overall Entrepreneurial Ability Score} = \frac{\sum_{i=1}^8 (3H_i + 2M_i + 1L_i)}{\sum_{i=1}^8 (H_i + M_i + L_i)} \quad (2)$$

Where,

$H_i$  = number of students who selected High (3) for question  $i$

$M_i$  = number of students who selected Medium (2) for question  $i$

$L_i$  = number of students who selected Low (1) for question  $i$

To determine whether differences in entrepreneurial-ability distributions among groups were statistically significant, a Chi-square ( $\chi^2$ ) Test of Independence was performed for each of the eight items (Ott & Longnecker, 2021). The Chi-square test examines whether the frequency distribution of High, Medium, and Low responses differs across categorical groups. The test statistic was calculated using the standard formula:

$$\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad (3)$$

where,

$O_{ij}$  = the observed frequency in row  $i$ , column  $j$ ,

$E_{ij}$  = the expected frequency calculated under the assumption of independence.

A result was considered statistically significant when the p-value was less than 0.001 ( $p < 0.001$ ), indicating a less than 0.1% probability that the observed differences occurred due to chance. This threshold reflects a stringent criterion commonly used in social-science and behavioral-science research to ensure robustness and reliability of findings.

To assess the strength of the association identified by the Chi-square tests, Cramér’s  $V$  was computed for each entrepreneurial-ability item. Cramér’s  $V$  is an effect-size measure appropriate for nominal data arranged in contingency tables of any dimension (Telford *et al.*, 2020). It is calculated as:

$$V = \sqrt{\frac{\chi^2}{N(k - 1)}} \quad (4)$$

where,

$N$  = the total sample size,

$k$  = the number of categories in the smaller variable.

### 3. Results and Discussion

The data obtained from the study, along with the statistical analysis and resulting findings, are discussed below.

#### 3.1 Academic Entrepreneurial Knowledge and Entrepreneurial Ability

A total of 2,949 students were categorized into three groups based on their academic entrepreneurial knowledge: sound knowledge (n = 240), little knowledge (n = 860), and no academic knowledge (n = 1,849). Their responses to eight entrepreneurial-ability items were analyzed using a three-point scale (High = 3, Medium = 2, Low = 1). Table 1 presents the distribution of High, Medium, and Low responses across these groups for each question.

Table 1. Frequency of Entrepreneurial Ability Ratings by Level of Academic Entrepreneurial Knowledge

Question	Sound academic knowledge			Little academic knowledge			No academic knowledge		
	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)
Q1 Self-starter	155	69	16	195	438	227	277	832	740
Q2 Lead others	84	109	47	147	403	310	185	740	924
Q3 Take responsibilities	107	102	31	220	430	210	333	869	647
Q4 Organizer	138	56	46	180	420	260	259	814	776
Q5 Good worker	62	160	18	300	380	180	462	925	462
Q6 Make excellent decisions	89	86	65	160	313	387	222	795	832
Q7 Trustworthy	104	114	22	377	343	140	647	1028	174
Q8 Keep records	179	28	33	200	410	250	296	851	702

The Mean Entrepreneurial Ability Score by Question and Knowledge Level and the Overall Entrepreneurial Ability Score by Academic Knowledge Level are presented in Figure 2(a) and Figure 2(b), respectively.

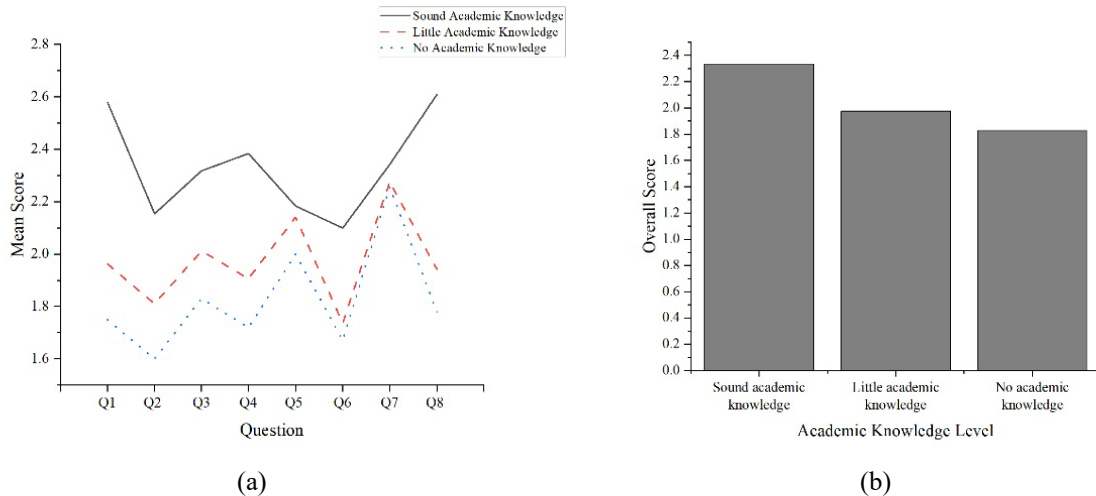


Figure 2. Academic Knowledge and Entrepreneurial Ability (a) Mean Entrepreneurial Ability Score (b) Overall Entrepreneurial Ability Score

Figure 2 shows clear differences in entrepreneurial ability across academic knowledge levels. Students with sound academic knowledge consistently score the highest on all eight entrepreneurial-ability items, while those with no academic knowledge score the lowest. The overall scores in Figure 2(b) confirm this gradient, indicating that greater academic exposure to entrepreneurship is associated with stronger entrepreneurial competencies. These findings

suggest that entrepreneurship education plays a meaningful role in enhancing students' self-perceived entrepreneurial abilities.

The Chi-square ( $\chi^2$ ) tests and corresponding effect sizes (Cramér's V) for academic knowledge in determining entrepreneurial ability are presented in Table 2.

Table 2. Chi-Square Test Results and Cramér's V for academic knowledge and Entrepreneurial Ability

Question	$\chi^2$	p-value	Cramér's V
Q1 Self-starter	355.906	$9.305 \times 10^{-76}$	0.246
Q2 Lead others	169.194	$1.557 \times 10^{-35}$	0.169
Q3 Take responsibilities	122.522	$1.545 \times 10^{-25}$	0.144
Q4 Organizer	278.416	$4.893 \times 10^{-59}$	0.217
Q5 Good worker	70.368	$1.898 \times 10^{-14}$	0.109
Q6 Make excellent decisions	112.875	$1.773 \times 10^{-23}$	0.138
Q7 Trustworthy	68.42	$4.891 \times 10^{-14}$	0.108
Q8 Keep records	424.344	$1.526 \times 10^{-90}$	0.268

The Chi-square tests revealed statistically significant associations ( $p < 0.001$  for all items) between academic entrepreneurial knowledge and students' entrepreneurial abilities across all eight behavioral dimensions. This indicates that the distribution of high, medium, and low responses varied systematically depending on the students' level of academic exposure to entrepreneurship. The effect sizes, measured using Cramér's V, ranged from 0.108 to 0.268, suggesting small to moderate practical significance. Among the competencies, record-keeping (Q8) and self-starting ability (Q1) demonstrated the strongest associations with academic knowledge, indicating that formal entrepreneurship education may particularly enhance students' confidence in these areas. Conversely, trustworthiness (Q7) and work ethic (Q5) showed weaker associations, implying that these traits may be more influenced by personal or cultural factors rather than academic instruction. Overall, the results highlight that academic entrepreneurial knowledge plays a meaningful role in shaping specific entrepreneurial behaviors, reinforcing the value of structured entrepreneurship education in undergraduate programs.

### 3.2 Socio-Economic Groups and Entrepreneurial Ability

A total of 3,019 students were categorized into three socio-economic groups based on their monthly family income: upper class ( $n = 333$ ;  $>21,500$  BDT), middle class ( $n = 1,230$ ;  $12,900-21,500$  BDT), and lower class ( $n = 1,456$ ;  $<12,900$  BDT). Their responses to the same eight entrepreneurial-ability items were evaluated using a three-point scale (High = 3, Medium = 2, Low = 1). Table 3 presents the distribution of High, Medium, and Low responses for each question across the three income groups.

The Mean Entrepreneurial Ability Score by Question and Socio-Economic Class, along with the Overall Entrepreneurial Ability Score by Income Level, are displayed in Figure 3(a) and Figure 3(b), respectively.

Table 3. Frequency of Entrepreneurial Ability Ratings by Socio-Economic Class

Question	Upper class			Middle class			Lower class		
	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)
Q1 Self-starter	131	143	59	611	472	147	394	624	438
Q2 Lead others	147	126	60	389	566	275	463	702	291
Q3 Take responsibilities	152	118	63	431	524	275	498	693	265
Q4 Organizer	161	121	51	417	572	241	447	723	286
Q5 Good worker	103	182	48	357	599	274	634	588	234
Q6 Make excellent decisions	139	114	80	344	563	323	459	634	363

Q7 Trustworthy	144	147	42	612	493	125	507	684	265
Q8 Keep records	168	104	61	395	657	178	448	721	287

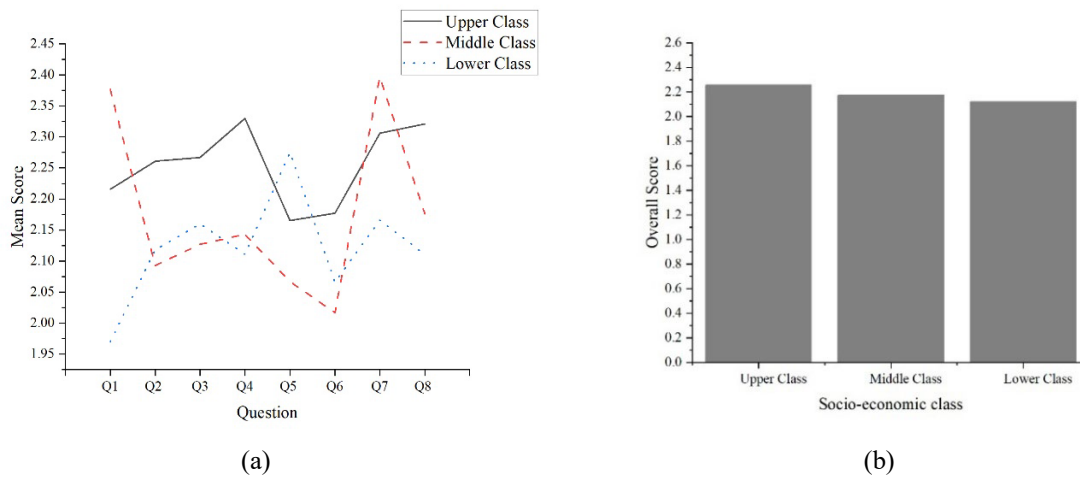


Figure 3. Socio-Economic Class and Entrepreneurial Ability (a) Mean Entrepreneurial Ability Score (b) Overall Entrepreneurial Ability Score

Figure 3(a) illustrates upper-class students demonstrate the highest entrepreneurial ability scores across most of the eight items, which is consistent with the advantages typically associated with higher income—such as better access to education, mentorship, confidence-building environments, and exposure to business practices. However, the graph also reveals several instances where middle-class or lower-class students show higher mean scores than upper-class students on specific entrepreneurial traits. In Figure 3(b), although upper-class students maintain the highest overall entrepreneurial ability, the differences between classes are not extreme, reflecting the compensatory strengths seen among middle- and lower-class groups. These findings suggest that while upper-class students generally scored the highest, the data also show instances where middle- and lower-class groups reported slightly higher mean scores on specific traits. These variations indicate that entrepreneurial self-perception is not exclusively tied to income level. However, because this study did not measure psychological or motivational variables directly, these interpretations remain tentative and should be validated through qualitative or longitudinal studies.

The Chi-square ( $\chi^2$ ) tests and corresponding effect sizes (Cramér’s V) examining the association between socio-economic class and entrepreneurial ability are summarized in Table 4.

The Chi-square results indicate that socio-economic class is significantly associated with students’ entrepreneurial-ability ratings across all eight behavioral dimensions ( $p < 0.001$  for each item). Although all associations were statistically significant, the effect sizes measured by Cramér’s V were generally small, ranging from 0.062 to 0.182, indicating modest practical influence of income level on entrepreneurial competencies. Among the eight items, self-starting ability (Q1) demonstrated the strongest association with socio-economic class ( $V = 0.182$ ), suggesting that students from higher-income families are more likely to perceive themselves as proactive and self-motivated. Moderate effects were also observed for work ethic (Q5) and trustworthiness (Q7), reflecting differences in confidence and behavioral traits across income groups. The remaining items showed weaker effects ( $V \approx 0.06\text{--}0.08$ ), implying that abilities such as leadership, responsibility-taking, organizing, and decision-making may be less influenced by socio-economic status.

Table 4. Chi-Square Test Results and Cramér’s V for Socio-Economic Class and Entrepreneurial Ability

Question	$\chi^2$	p-value	Cramér’s V
Q1 Self-starter	199.548	$4.699 \times 10^{-42}$	0.182
Q2 Lead others	23.298	$1.104 \times 10^{-4}$	0.062
Q3 Take responsibilities	26.52	$2.485 \times 10^{-5}$	0.066
Q4 Organizer	38.054	$1.092 \times 10^{-7}$	0.079
Q5 Good worker	76.209	$1.106 \times 10^{-15}$	0.112

Q6 Make excellent decisions	25.044	$4.929 \times 10^{-5}$	0.064
Q7 Trustworthy	73.821	$3.538 \times 10^{-15}$	0.111
Q8 Keep records	69.574	$2.792 \times 10^{-14}$	0.107

### 3.3 Gender and Entrepreneurial Ability

A total of 3,000 students were classified into two gender groups for the analysis of gender-based differences in entrepreneurial ability: male students (n = 2,220) and female students (n = 780). Their responses to eight entrepreneurial-ability items were evaluated using the same three-point scale (High = 3, Medium = 2, Low = 1). Table 5 presents the distribution of High, Medium, and Low responses for each question across the male and female groups.

Table 5. Frequency of Entrepreneurial Ability Ratings Among Male and Female Students

Question	Male			Female		
	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)
Q1 Self-starter	811	947	462	337	304	139
Q2 Lead others	932	949	339	238	334	208
Q3 Take responsibilities	784	1031	405	321	343	116
Q4 Organizer	868	957	395	249	341	190
Q5 Good worker	743	1112	365	231	397	152
Q6 Make excellent decisions	827	1014	379	267	329	184
Q7 Trustworthy	901	998	321	259	357	164
Q8 Keep records	769	1023	428	314	304	162

The Mean Entrepreneurial Ability Score by Question and Gender, as well as the Overall Entrepreneurial Ability Score by Gender, are illustrated in Figure 4(a) and Figure 4(b), respectively.

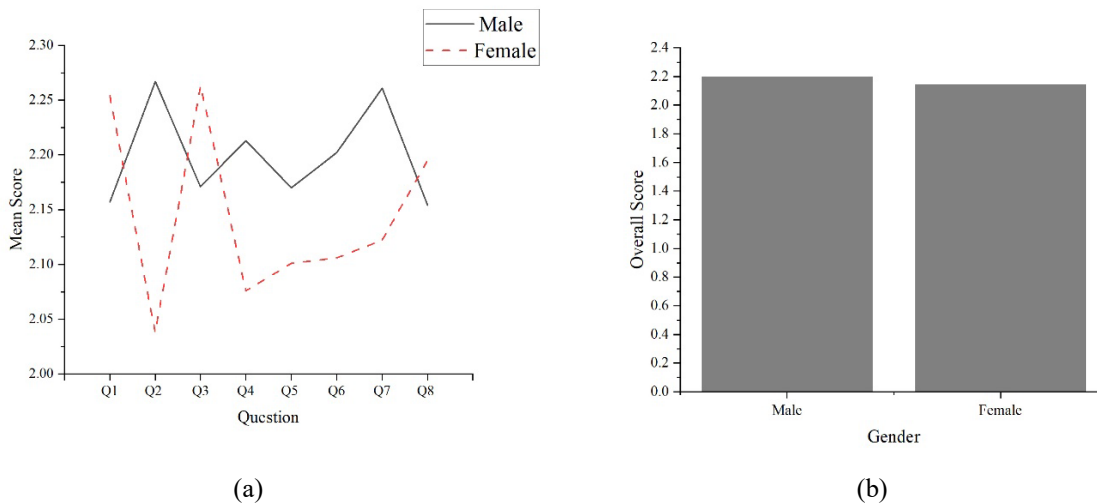


Figure 4. Gender and Entrepreneurial Ability (a) Mean Entrepreneurial Ability Score (b) Overall Entrepreneurial Ability Score

In Figure 4(a), male students consistently display slightly higher mean scores across most items compared to female students. This pattern suggests that males tend to rate their entrepreneurial abilities—such as leadership, decision-making, organizational skill, and trustworthiness—more favorably. Female students, however, show competitive or higher performance in a few specific traits, most notably self-starting, responsibility-taking, and record-keeping, indicating strengths that align with discipline, reliability, and conscientiousness. Despite these item-level variations, subfigure Figure 4 (b) reveals that the overall entrepreneurial ability scores for males and females are very close, with males showing only a marginal advantage.

The Chi-square ( $\chi^2$ ) tests and corresponding effect sizes (Cramér's V) assessing the association between gender and entrepreneurial ability are summarized in Table 6.

Table 6. Chi-Square Test Results and Cramér's V for Gender and Entrepreneurial Ability

Question	$\chi^2$	p-value	Cramér's V
Q1 Self-starter	11.172	$3.750 \times 10^{-3}$	0.061
Q2 Lead others	60.583	$6.990 \times 10^{-14}$	0.142
Q3 Take responsibilities	9.887	$7.130 \times 10^{-3}$	0.057
Q4 Organizer	20.795	$3.052 \times 10^{-5}$	0.083
Q5 Good worker	5.821	$5.444 \times 10^{-2}$	0.044
Q6 Make excellent decisions	16.086	$3.213 \times 10^{-4}$	0.073
Q7 Trustworthy	23.609	$7.470 \times 10^{-6}$	0.089
Q8 Keep records	12.286	$2.148 \times 10^{-3}$	0.064

The Chi-square results indicate that gender has a statistically significant association with entrepreneurial-ability ratings for most of the eight behavioral questions ( $p < 0.05$ ), except for Q5 (Good worker), which approaches but does not reach statistical significance. The effect sizes (Cramér's V) are small, ranging from 0.044 to 0.142, indicating that gender differences in entrepreneurial ability, while present, are generally modest. The strongest gender-based differences occur in leadership ability (Q2) and trustworthiness (Q7), suggesting meaningful variation between male and female students in these dimensions.

### 3.3 Entrepreneurial Family Background and Entrepreneurial Ability

A total of 3,000 students were also categorized into two groups based on their parental entrepreneurial background: students with at least one parent currently or previously engaged in entrepreneurial activity ( $n = 2,220$ ), and students without any parental entrepreneurial background ( $n = 780$ ). Their responses to eight entrepreneurial-ability items were assessed using the same three-point scale (High = 3, Medium = 2, Low = 1). Table 7 presents the distribution of High, Medium, and Low responses for each question across the two groups.

Table 7. Frequency Distribution of Entrepreneurial-Ability Responses for Students with and without Entrepreneurial Family Background

Question	With entrepreneurial family background			No entrepreneurial family background		
	High (3)	Medium (2)	Low (1)	High (3)	Medium (2)	Low (1)
Q1 Self-starter	927	921	372	266	318	196
Q2 Lead others	894	976	350	231	329	220
Q3 Take responsibilities	918	934	368	244	316	220
Q4 Organizer	863	1001	356	227	345	208
Q5 Good worker	782	1077	361	212	365	203
Q6 Make excellent decisions	841	976	403	236	314	230
Q7 Trustworthy	903	998	319	259	331	190
Q8 Keep records	867	1022	331	248	315	217

The Mean Entrepreneurial Ability Score by Question and Parental Entrepreneurial Background, along with the Overall Entrepreneurial Ability Score by Family Background, are shown in Figure 5(a) and Figure 5(b), respectively.

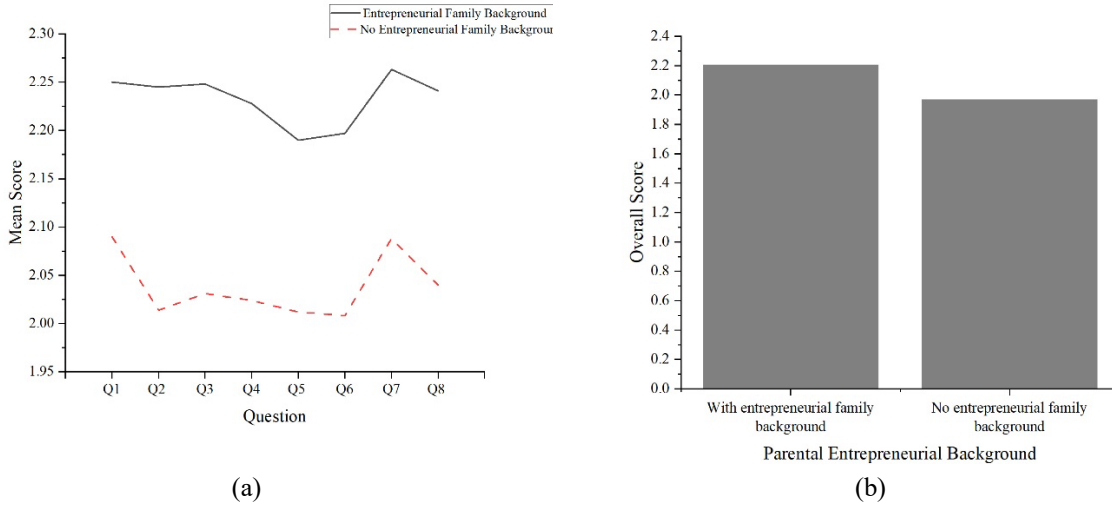


Figure 5. Parental Entrepreneurial background and Entrepreneurial Ability (a) Mean Entrepreneurial Ability Score (b) Overall Entrepreneurial Ability Score

Figure 5 illustrates the influence of parental entrepreneurial background on students' entrepreneurial ability. Figure 5(a) shows that students who come from families with an entrepreneurial background consistently report higher mean scores across all eight entrepreneurial-ability items. Figure 5(b) further highlights this difference at an aggregate level. The overall entrepreneurial ability score is substantially higher for students with parental entrepreneurial background, while those without such background score nearly 0.3 points lower on the 1–3 scale. The Chi-square ( $\chi^2$ ) tests and corresponding effect sizes (Cramér's V), which evaluate the association between parental entrepreneurial background and entrepreneurial ability, are summarized in Table 8.

Table 8. Chi-Square Test Results and Cramér's V for Entrepreneurial family background and Entrepreneurial Ability

Question	$\chi^2$	p-value	Cramér's V
Q1 Self-starter	29.94	$3.151 \times 10^{-7}$	0.1
Q2 Lead others	64.904	$8.058 \times 10^{-15}$	0.147
Q3 Take responsibilities	55.268	$9.971 \times 10^{-13}$	0.136
Q4 Organizer	49.96	$1.417 \times 10^{-11}$	0.129
Q5 Good worker	40.904	$1.312 \times 10^{-9}$	0.117
Q6 Make excellent decisions	46.337	$8.669 \times 10^{-11}$	0.124
Q7 Trustworthy	24.285	$5.327 \times 10^{-6}$	0.09
Q8 Keep records	64.99	$7.721 \times 10^{-15}$	0.147

The Chi-square results show statistically significant associations ( $p < 0.001$  for all items) between family entrepreneurial background and entrepreneurial ability across all eight question categories. Effect sizes (Cramér's V) range from 0.090 to 0.147, indicating small but meaningful effects. The strongest associations are observed for Q2 Lead others and Q8 Keep records ( $V = 0.147$ ), suggesting that students from entrepreneurial families demonstrate notably stronger leadership and record-keeping confidence. Overall, the findings indicate that having an entrepreneurial parent moderately enhances several key entrepreneurial competencies.

#### 4. Conclusion

This study examined the entrepreneurial abilities of undergraduate students in Bangladesh and showed that these abilities vary across academic knowledge, socio-economic class, gender, and parental entrepreneurial background. Several findings aligned with existing literature—particularly the strong influence of parental entrepreneurial background and the positive effect of academic exposure on entrepreneurial ability. However, some unexpected results

emerged. For example, despite expectations that upper-class students would consistently score the highest, middle- and lower-class students occasionally reported higher self-perceived ability in traits such as responsibility-taking and work ethic. Additionally, gender differences were smaller than reported in many previous studies, with female students outperforming male students in several specific traits. These unexpected patterns suggest that entrepreneurial confidence may develop independently of traditional socio-demographic advantages.

The findings of this research underscore the need for universities and policymakers to strengthen entrepreneurship education, expand practical learning opportunities, and design targeted interventions for students who may lack the advantages provided by income or family background. Enhancing entrepreneurial readiness among undergraduate students can contribute significantly to youth employment, innovation, and long-term economic development in Bangladesh.

## 5. Future Work

Future work may include expanding the study to more universities, exploring additional psychological or environmental factors, and conducting longitudinal research to track how entrepreneurial abilities develop over time. Qualitative interviews could also provide deeper insights into students' motivations and barriers.

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