



FACTORS ASSOCIATED WITH UNDERGRADUATE STUDENTS' SUBJECT SELECTION IN BANGLADESH

Md. Easin Ahmed* and Md. Shamim Hossain

Mass Communication and Journalism Discipline, Khulna University, Khulna - 9208, Bangladesh

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Abstract

Subject selection is a critical decision for undergraduate students as it has a significant impact on their personal development and future careers. A mixed method approach was used to investigate the decision-making process and the factors that influence subject selection of undergraduate students at Khulna University. Quantitative data were collected from 300 participants using an online survey questionnaire, and qualitative data was gathered from four focus group discussions. The study found that in selecting academic subjects, students typically go through nine steps: identifying desire subjects; anxiety about desired subjects; seeking information from sources; assessing the influence of sources; comparing and depending on sources; understanding own motivations; comparison between subjects; making a decision; and conducting post-decision evaluations. The quantitative results show that family members and teachers were the most influential factors in choosing academic subjects. Additionally, students mentioned that they relied on a variety of human and electronic sources to gather information during their decision-making process. They relied on human sources like senior students and friends for better understanding regarding future career of a subject. They also used electronic sources like Google search, social media, and university websites in enhancing their information-gathering process. The qualitative findings suggest that in the process of selecting major students often experience mental stress due to a lack of information about desired subjects, challenges in getting preferred subject, and the pressure from families to take their preferred subject. The study offers a systematic understanding of the factors and decision-makers that shape the subject selection process of undergraduate students.

Keywords: Decision-making, Influencer, Education, Subject selection, Mixed method

Introduction

Education at the undergraduate level plays an important role in shaping students' careers and future prospects (Watts, 2018). It gives them the confidence, logical reasoning and necessary skills to tackle challenges and make informed decisions (Pascarella & Terenzini, 2016). However, a significant portion of undergraduate students lose their interest in their chosen major during their time at university (Bennett & Penney, 2018). Students may lose interest in a subject for various reasons, such as a mismatch between expectations and the curriculum, a lack of engagement with the subject matter, growing interests in other subjects, etc. (Drewes & Michael, 2006). Therefore, making an informed decision about selecting an undergraduate major is crucial.

When selecting a major, students go through a great deal of concern and uncertainty (Galotti, 1999). They are influenced by various factors such as their interests and abilities (Beggs et al., 2008; Zhang, 2006) and the career opportunities of the subject (Malgwi et al., 2005). Othman et al. (2019) stated that making a decision is more complex than it appears as individuals' decisions may lead to either success or failure in life. Students may have inadequate information about the multipole subject options available to them (Chaturapruek et al., 2021). They sometimes need some kind of resource to make a decision (Ryan et al., 2001). Students use different sources of information (e.g., peers, family, friends, and current or former university students) in their decision-making process (Slack et al., 2012). Students who want to be admitted to private university valued reputation, selectivity, personal interaction, facilities, and cost, while public university students valued programs, athletics, reputation, cost, housing, and location (Joseph et al., 2012). International students consider university brochures and websites,

*Corresponding author: <easin.ku.mcj@gmail.com>

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recommendations of former students, and information from the international office as important factors in their university of choice, while national students consider recommendations from former students or friends, university websites, and visits by university representatives (Calitz et al., 2020).

Most of the studies regarding students' decision-making focus on either university selection or a particular course selection. However, the process of choosing a subject or major receives less attention even if it significantly impacts students. Therefore, it is essential to understand the selection process for the undergraduate major. This understanding will not only benefit students but also educators and administrators, helping them in planning, informed decision-making, and managing the complexities associated with subject selection. To investigate the decision-making process of a student, this study aims to focus on the following research questions:

RQ1. What are the steps that students typically go through when making a decision to select an undergraduate subject?

RQ2. What are the key factors that facilitate the decision-making process for students when selecting their subject?

RQ3. Which factors have a significant impact on the student's decision-making process to select an undergraduate subject?

Literature Review

The decision-making process has drawn the attention of researchers from a diverse of fields, including psychology, marketing, and education. Jonassen (2012) stated that there are different types of decisions e.g., making choices, accepting options, evaluating possibilities, etc. and it is an important skill for dealing with complex problems. Similarly, Malakooti (2012) identified four key steps in the consumer decision-making process: information gathering, searching for alternatives, evaluation, and making a decision. These steps play an important role in guiding individuals to reach a final decision. In addition, Gupta and Mehta (2021) stated that individuals go through various cognitive and behavioral steps, such as problem recognition, information search, alternative evaluation, and choice selection, in the decision-making process. Lemon and Verhoef (2016) developed a conceptual model in a similar way that includes five stages of the decision-making process of an individual, which include problem recognition, information search, evaluation, decision, and post-purchase evaluation. Additionally, Kahneman and Tversky (2000) found that personal biases, emotions, and the social environment have an impact on a person's decision-making. However, the decision-making process might differ greatly between people even when faced with similar conditions, (Galotti et al., 2014). Policymakers use a formal technique called 'multicriteria thinking' to make informed decisions (Saaty, 1994). On the other hand, strategic leaders employ quantitative techniques to select an action or solution from a set of options which enable them to reduce uncertainty in their decision-making process (Rector, 1997).

While there aren't many studies specifically focusing on the decision-making process in undergraduate subject selection, there has been plenty of research conducted on how students make decisions when choosing universities and courses. As the growing number of options available in terms of where and what to study, Wu (2014) stated that the decision-making process for students has become more complex. Students prefer universities that are closer to their homes (Kopanidis, 2008; Drewes & Michael, 2006; Briggs, 2006), spend more on scholarships and teaching (Joseph et al., 2012; Drewes & Michael, 2006), and offer higher levels of non-academic student services (Joseph et al., 2012; Raposo & Alves, 2007; Drewes & Michael, 2006). Students' decisions regarding course selection can significantly influence their academic performance and future prospects (Othman et al., 2019). To make informed choices, students often turn to current students for assistance, seeking information about the university's offered courses that align with their academic goals and interests. Goyette and Mullen (2006) discovered that students from higher socioeconomic backgrounds were more inclined to choose arts and science fields, whereas vocational majors led to higher-paying jobs for graduates after four years. Hewner (2014) found that many computer science students lacked specific educational goals and assumed that all curriculum-required courses were useful. Wellington and Sikes (2006) revealed that students pursuing professional doctorates had diverse motivations, including a need for theory, deeper insight into practice, and extrinsic factors.

In the context of Bangladesh, several studies have investigated the factors that influence students' decision-making when it comes to choosing universities and career paths. Islam et al. (2020) found that distance from home, level of education, university location, tuition cost, scholarship availability, and campus visits are influential factors

in university choice. Anam (2019) identified reputation, academic quality, location, cost, and facilities as important considerations for students selecting a university. In terms of career choice, Islam et al. (2021) highlighted personality, family influence, job prospects, job security, and salary as significant factors for undergraduate students in public universities. Hossain and Siddique (2012) emphasized financial benefit, social status, and job security as major motivations for business graduates' career preferences in private universities. Tabassum and Rahman (2014) explored individual, psychosocial, economic, and educational aspects as factors that influence career choices of BBA students. Jony (2021) identified success factors like appropriate choice of study, subject interest, attendance, examination preparation, teachers' skills, written communication, and study methods affecting students' academic performance. Saif et al. (2017) highlighted the importance of reputation and online services in university selection for higher education.

While there is a considerable amount of research on the university and course selection process and factors, there is a limited number of studies on subject selection process in Bangladesh. In this context, this study aims to bridge this gap by investigating the subject selection process and factors influencing undergraduate students in Bangladesh.

Theoretical and Conceptual Framework

Most of the theories regarding decision-making processes have primarily focused on consumer behavior. Engel et al. (1968) introduced a five-step model for how consumers make decisions when they want to buy a product. The steps are problem recognition, information search, evaluation of alternatives, purchase decision, purchase, and post-purchase evaluation.

This model has been widely used and adapted by researchers (Santos & Gonçalves, 2021; Lemon & Verhoef, 2016; Hudson & Hudson, 2013) to analyze consumer decision behavior. In the decision-making process, consumers initially identify a need or issue prompted by internal or external stimuli (Moreau & Dahl, 2005). Subsequently, they seek information from various sources like friends, ads, and reviews (Tavares et al., 2021). Then they assess alternatives based on price, quality, features, and brand reputation (Pelau & Stamule, 2013). After evaluating options, the consumers make a decision aligning with their preferences, needs, and budget (Tavares et al., 2021). The consumer completes the transaction, acquiring the chosen product or service (Lemon & Verhoef, 2016), and then evaluates their satisfaction, potentially leading to repeat purchases or complaints if dissatisfied (Panda, 2014).

This model has also been applied by researchers to comprehend student decision-making processes in higher education, especially in university selection and course selection. Callender and Jackson (2008) assert that higher education's competitiveness has increased, leading students to exhibit consumer-like behavior in their decision-making.

Schwenk (1990) presents a three-stage model for decision-making in strategic contexts. Firstly, students identify their goals or problems. Next, they generate various alternatives to address the identified goals or problems. Lastly, they evaluate and choose the best option among the generated alternatives.

Towers and Towers (2018) have found that postgraduate students have gone through a similar process such as problem recognition, information search, evaluation, decision, and post purchase evaluation in the course selection decision making process. They found that at first, students recognize the need to choose courses that align with their academic requirements, career goals, or interests. Next, they actively search for information from various sources like university websites, catalogs, advisors, and peers. After gathering information, they carefully evaluate and compare course options based on criteria like content, relevance, workload, and opportunities. Once the evaluation is done, they make a decision that considers both rational factors and personal preferences. After enrolling in the chosen courses, they assess their satisfaction and may adjust their choices if needed based on their post-purchase evaluation.

Similarly, Othman et al., (2019) identified three phases in the students' decision-making process: the search phase, evaluation phase, and choice phase. During the search phase, students actively gather information from various sources, such as peers, teachers, and university websites. In the evaluation phase, they assess and rank the gathered information to make informed decisions. Finally, in the choice phase, they make their decision based on the evaluation and proceed with their selected option.

Based on the literature above, this study introduces a conceptual model (**Figure 1**) depicting students' decision-making process when selecting their major. The framework is inspired by Towers and Towers (2018) but has been adapted and modified to suit the specific context of this study.

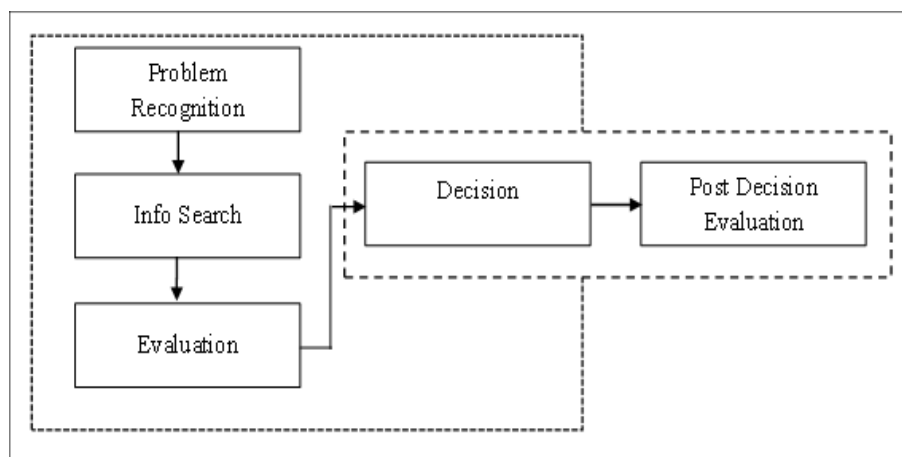


Figure 1. Conceptual Framework of Students' Subject Selection

Materials and Method

This study has adopted a mixed method approach in order to effectively address the research questions and objectives, requiring both qualitative and quantitative methods. Creswell and Creswell (2018) stated that mixed method research combines data collection and analysis from both quantitative and qualitative sources to explore research questions or objectives. Hirose & Creswell, (2023) and Caruth (2013) point out that mixed method research provides richer insights by combining both quantitative and qualitative approaches. It captures information that might be overlooked with a single research design and enhances the knowledge base. Within the framework of mixed methods research, the convergent, explanatory, and exploratory designs are recognized as the core approaches (Creswell & Creswell, 2018). To align with the research questions of this study, the convergent parallel-databases variant mixed method design has been implemented. In a convergent parallel-databases variant mixed methods design approach, the quantitative and qualitative data are gathered parallel, evaluated independently, and combined in the final analysis and interpretation (Creswell & Plano Clark, 2011). The quantitative aspect of this study involved administering surveys, while the qualitative component consisted of conducting focus group discussions (FGDs).

The survey questionnaire for this study was initially developed based on previous research. To ensure the questionnaire's clarity and comprehensibility, a pilot survey of 12 students was conducted beforehand. The feedback and observations from the pilot study were used to refine the language and content of the final questionnaire. The survey questionnaire consisted of a total of 29 questions and statements. This included 11 linear scale questions, ranging from strongly disagree (1) to strongly agree (5). The linear scale question was designed to assess students' satisfaction with their sources and the factors related to those sources. Nine single-choice questions were included to the questionnaire to collect information regarding decisions and sources. Additionally, seven multiple-choice questions and other types of response options were included to get a broad idea of the possible factors they considered important in their decision-making process. Demographic information (e.g., name, gender, and academic discipline) was also collected. To protect respondents' privacy, information that could potentially disclose their identity was not used in this study.

The questionnaire was distributed to first-year students in all academic disciplines via a Google Form link. The link was shared through Facebook groups and Messenger in April and May of 2022. The population for this study was defined as the 1230 students who enrolled in Khulna University in 2020 (Khulna University, 2020). These students had the opportunity to select their subject from multiple options. The online questionnaire was completed

by 371 students in total, which equals a 30% response rate. Among the respondents, 82% had chosen their discipline from a variety of subject possibilities, and 51% were female students. After considering the inclusion criteria of having multiple options when selecting their undergraduate subject, 305 responses were eligible for further analysis. Finally, this study included a total of 300 responses for analysis.

The quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. To analyze the data, statistical tools including descriptive statistics and inferential statistics were used.

The FGD method was utilized to gain insights into students' mental condition, sense of responsibility, and how they navigate the entire process. This approach was chosen to avoid potential misconceptions that may arise from using a pre-specified study design developed in other countries, which may not be applicable to the context of developing economies (Soja, 2008). A total of four FGDs were conducted, with each group comprising seven students. Participants were selected from the eight schools within Khulna University, which consists of 29 disciplines.

Data from the FGDs were transcribed, and after transcription, data were manually encoded. Once the encoding was finalized, the codes were manually categorized into different themes.

Results

Characteristics of the respondents

Table 1 shows that nearly half of the respondents are male which is 49% and female respondents are slightly over half which is 51%. Among the respondents, 62.9% are in the age range of 18 to 20, while 37.1% fall within the age group of 20 to 22. Most of the respondents (45.4%) resided in urban areas, and the second largest group of respondents resided in rural areas (35.4%). Most respondents were enrolled in the Science, Engineering, and Technology School (23%) and the Life Science School (26.7%). A significant portion of respondents come from elementary family (61%), followed by extended families (22%), and single-parent households (17%).

Table 1. Demographic profile and characteristics of the survey respondents

Category	Type/Group	No. of Respondents (n= 300)	Percentage (%)
Gender	Male	147	49
	Female	153	51
Age (Years)	18-20	189	62.9
	20-22	111	37.1
Residential Area	Urban	136	45.4
	Suburban	57	19.2
	Rural	107	35.4
Program Taken at University	Science, Engineering and Technology School	69	23
	Life Science School	80	26.7
	Social Science School	64	21.3
	Arts and Humanities School	20	6.7
	Fine Arts School	12	4
	Law School	15	5
	Education School	12	4
	Management and Business Administration School	28	9.3
Family Type	Elementary	183	61
	Extended	66	22
	Single-parent	51	17
Family's Income Range (Annual)	Below One lakh	126	42
	One to Three lakhs	103	34.1
	Three to Five lakhs	48	16.1
	Above Five lakhs	23	7.8

Table 2 presents the participant demographics for four Focus Group Discussions (FGDs) involving eight schools. Out of the 28 respondents, 42.86% were female students, while 57.14% were male students. Additionally, 71.43% of participants fell within the age range of 18-20, while 28.57% were aged between 21-22. The majority of FGD participants, comprising 42.86%, reside in urban areas.

Table 2. Demographic profile and characteristics of the FGD participants

Category	Type/Group	No. of Respondents (n= 28)	Percentage (%)
Gender	Male	16	57.14
	Female	12	42.86
Age (Years)	18-20	20	71.43
	20-22	08	28.57
Residential Area	Urban	12	42.86
	Suburban	07	25
	Rural	09	32.14
Program Taken at University	Science, Engineering and Technology School	06	21.43
	Life Science School	06	21.43
	Social Science School	04	14.29
	Arts and Humanities School	02	7.14
	Fine Arts School	02	7.14
	Law School	03	10.71
	Education School	02	7.14
	Management and Business Administration School	03	10.71

Influencing Factors

The statistical data in **Table 3** shows that the family has played the role of the most influential factors for the respondent categories. Family fully dominated the age categories. In terms of gender, family influenced female respondents the most (54.2%), while male respondents' own desires (54.4%) were the most influencing factors for them. Family has been a significant decision-maker for both elementary and extended family types, with mean values of 1.53 and 1.56 respectively. Interestingly, respondents from single-parent families chose their own desires as the most influencing factor, with a mean value of 1.29. In rural areas, respondents decided their own desires as the most influencing factor for choosing their undergraduate subject, with a mean value of 1.29. In both urban and rural areas, respondents were most influenced by their family, with mean values of 1.38 and 1.63 respectively.

Table 3. Descriptive statistics for most influencing factors

Respondents in Different Categories	Most Influencing Factor	Mean Value	Frequency	Percentage (%)
Male	Own Desire	1.46	80 (n=147)	54.4
Female	Family	1.54	83 (n=153)	54.2
Age between: 18-20 years	Family	1.53	100 (n=189)	52.9
Age between: 20-22 years	Family	1.54	60 (n=111)	54.1
Elementary Family	Family	1.53	97 (n=183)	53
Extended Family	Family	1.56	37 (n=66)	56.1
Single-parent Family	Own Desire	1.49	26 (n=51)	51
Urban Area	Family	1.38	52 (n=136)	38.2
Suburban Area	Family	1.63	36 (n=57)	63.2
Rural Area	Own Desire	1.29	76 (n=107)	71

The data analysis identified that students undergo these nine steps consecutively in their undergraduate subject selection decision-making process.

Identify the Desired Subject

The first step for students is to identify their desired subject, which can come from various sources such as school, college, or post-college experiences. **Figure 2** shows that 63% of students know that they have to identify their desired subject while in school, and 28% while in college.

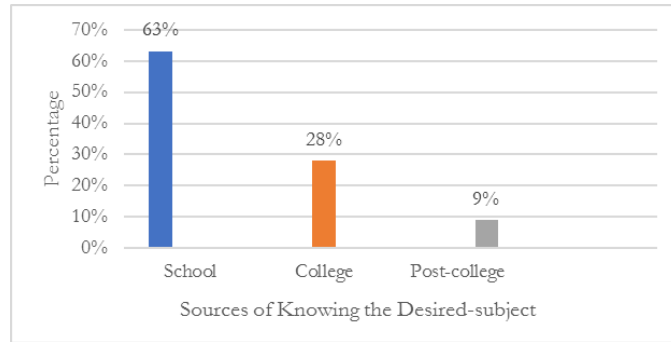


Figure 2. Specific subject selection literacy

In FGD, students expressed that they typically receive guidance from their parents, teachers, and other university students. During this process, they often engage in self-reflection to better understand their interests and goals, although they may also be influenced by social expectations. Some quotes have been presented in **Table 4** below.

Table 4. Participants' identification of desired subject

Category	Quotes from FGDs
Social Concern	"I always wanted to choose the best subject, or at least one that would be respected by society". (FGD 2)
Finds Strong Zone	'I was good in English at school, so I was determined then to try for English in University level.' (FGD 4)
Sources' Impact	'My cousin is a software engineer and I always wanted to be like him.' (FGD 3)

Anxiety about Desired Subject

Students often worry about the possibility of not being able to study their desired subject. The survey results in **Table 5** show that 86% of the respondents had a preferred subject before entering university.

Table 5. Pre-University desired subjects vs. enrollment outcomes

Response	Had Desired Subject		Getting Desired Subject	
	Freq. (n=300)	Per. (%)	Freq. (n=300)	Per. (%)
Yes	258	86	117	39
No	42	14	183	61

However, **Table 5** shows that only 39% of them were able to secure their desired subject by enrolling. The remaining majority of 61% were unable to get their preferred subject due to their merit position in the admission exam, while others faced family pressure. Data obtained from the FGDs about feeling anxiety are presented in **Table 6** below.

Table 6. Category of anxiety about desired subject

Category	Quotes from FGDs
Expecting Desired Subject	<i>'I love the field of agricultural studies but was confused about getting it as my subject.'</i> (FGD 3)
Expecting Easy Subjects	<i>'I prefer subjects that are easy and comfortable for me, and also consider the job prospects in that field.'</i> (FGD 1)
Specific Interest	<i>'I prefer studying applied subjects only. But I was confused whether I get this or not.'</i> (FGD 3)

The FGD participants expressed (Table 6) their thoughts and concerns regarding the factors influencing their choices. Under the category "Expecting Desired Subject" students discuss their passion for a specific field but express uncertainty about whether they can pursue it as their subject. In the category "Expecting easy subjects," students prioritize subjects that they find easy and comfortable while considering future job prospects. The category "Specific interest" highlights students' preference for applied subjects and their hesitation about whether they can enroll in their desired subject. These quotes offer valuable insights into the complexities and considerations that students encounter during their subject selection process.

Source of Information

Figure 3 shows that after identifying a desired subject 34% of respondents use Google as their first source to seek information related to the subject, while 28% approach known university students.

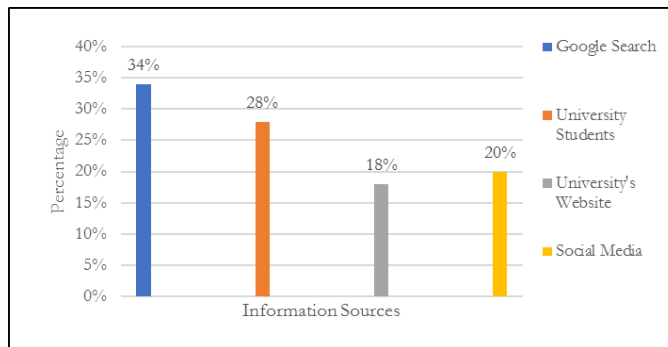


Figure 3. Information sources for subjects

They brainstorm some questions and think of possible sources to find the answers. Students have to face some difficulties in this step. The FGD (Table 7) showed that lack of information in admission process, challenges in finding reliable information and parental involvement are the thematic categories, which provoke students to seek sources for information.

Table 7. Students' aspiration issues for information

Aspiration Issues	Quotes from FGDs
Lack of Information in Admission Process	<i>'I had very little knowledge about the admission process and the value of subjects in higher education, which made it a great challenge for me. I strongly felt the lack of information at that time.'</i> FGD 4
Challenges in Finding Reliable Information	<i>'Finding the actual source of information was a great challenge, so I started by formulating my own questions and then searched for answers on YouTube, Facebook admission groups, and sought out subject reviews.'</i> FGD 1
Parental Involvement	<i>'Before making any decisions, I discussed the subject options with my parents to understand their preferences. During this process, several questions arose such as the depth of knowledge required, the level of effort needed, and the potential career paths associated with each subject.'</i> FGD 3

Sources' Influence

Figure 4 shows that students perceive family members as having the greatest influence on their decisions (41%), and they also see themselves as significant decision-makers (29%). Following their family and their own desires, students seek consultation from their teachers (12%) and then from known university students (9%).

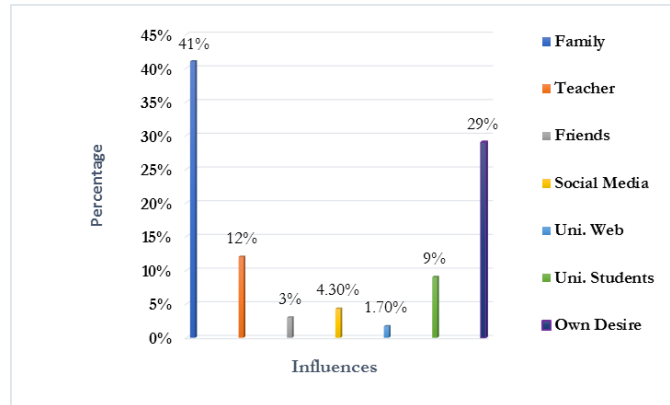


Figure 4. Sources influencing the most

Students generally seek several sources for information. Table 8 presents the FGD data, which indicates that families actively try to influence students in selecting subjects.

Table 8. Influencing facts of sources

Facts	Quotes from FGDs
Family's Desire	<i>'My family always wanted me to be a Lawyer. So, it was fixed that they will admit me in Law Discipline'</i> FGD 4
Educators Suggestion	<i>'My teacher is a guardian to me. He is an English graduate and wanted me to be too. That's what I cordially agreed'</i> FGD 1
Senior Students Impact	<i>'A senior student of this campus told me, there is a separate quota for Sociology in BC.S and told me to admit in this Discipline'</i> FGD 3

Motives of Students

Students' primary motive for choosing a subject is to secure a stable career after graduation, which is their ultimate goal. However, they also consider other factors, such as reputation of the subject, enjoyability of reading, and the potential to achieve a high CGPA. Additionally, some students are concerned with the possibility of getting private tutorship to earn their monthly expenses. Table 9 presents quotes from the respondents expressing their motivation for choosing a major.

Table 9. Students motives to select a subject

Category	Quotes from FGD
Career Opportunity	<i>'I aspire to serve the agricultural industry, which is why I have decided to study Agrotechnology.'</i> FGD 3
Enjoyability	<i>'I enjoy solving mathematical problems, which is why I was inclined towards selecting Mathematics or subjects that involve equations similar to Mathematics.'</i> FGD 2
Subjects' Reputation	<i>'In addition to considering my career goals and personal interests, the reputation of the subject was also a significant factor in my decision-making process.'</i> FGD 1

Table 10 shows that 46% of the respondents' indicated that the most influential factor in subject selection is career goals. The second most motivating factor for subject selection is social impact, constituting 18.3%. A small portion of respondents (1.7%) indicated that they chose their subjects without considering any specific motivation.

Table 10. Motivating factors in subject selection

Question	Options	Frequency	Percentage (%)
The motivating factors that played role in subject selection.	Career Goal	138	46
	Social Impact	55	18.3
	Enjoyability	47	15.7
	Earning CGPA	19	6.3
	No Motive	5	1.7

Comparison between Subjects

Students compare various factors between one subject to another in the selection process. Among them, the job sector or career opportunities of the subject is the most influential factor. Another important factor is the opportunity to pursue higher studies abroad. Students justify the demand for the subjects in foreign countries they aspire to study in. In **Table 11** related quotes from the respondents have been shown below.

Table 11. Students compare subjects before making a decision

Criteria	Quotes from FGD
Career Opportunities	'I primarily compared subjects based on their potential career opportunities, and the wide range of job opportunities in the field of Agrotechnology prompted me to choose this subject.' FGD 3
Personal Desires	'I considered fulfilling my personal desires as the most important criterion, so I evaluated subjects based on their ability to satisfy my interests and be enjoyable for me to study.' FGD 1
Future of the Subject	'Higher study facilities and job opportunities in every subject's field helped me comparing.' FGD 4

Students considered and compared a range of factors when choosing their subjects. **Figure 5** illustrates that 66% of the respondents indicated that the job sector was the most important criterion when comparing subjects. The reputation of the subject (17%) and opportunities for higher studies (7.30%) also played important roles in comparing subjects.

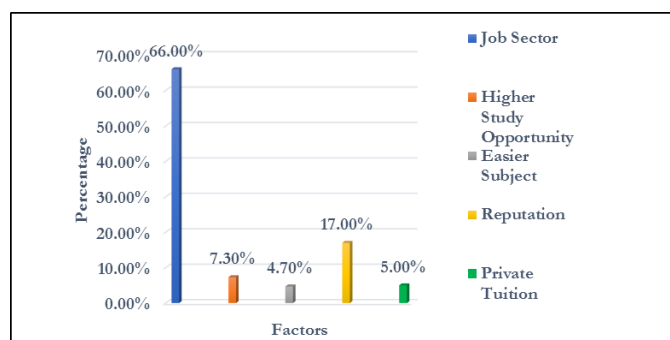


Figure 5. Factors of subject selection

Comparing and Depending on Sources

During the selection process, students compare their sources based on their career position, behavior, smartness, and knowledge. They look for similarities among the information they have received from different sources and cross-check them to justify their reliability. After the justification process, they become more confident and believe in a source calmly. **Table 12** below presents the quotes from the respondents.

Table 12. Comparison of information sources influencing students

Category	Quotes from FGD
Reliability	<i>'It was clear to me that my family wants the best for. They are my most own and reliable. That is why I never needed another source to get or compare'</i> FGD 2
Position of the Source	<i>'I discussed with several senior students about subject selection. When their opinions used to clash, I always compared their present position and keep the better one's opinion.'</i> FGD 4
Clarity of Information	<i>'Some sources could not clearly deliver me information then I approached another one. I cannot depend on a source who is not clear himself.'</i> FGD 1

As **Table 13** shows that, 30% of respondents consider their family to be the most dependable source. University students and social media groups are the second and third most reliable sources, respectively. However, only 3% of the students consider their friends as dependable sources.

Table 13. Primary sources of influence of students

Category	Options	Frequency (n=300)	Percentage (%)
Comparison of Information Sources	Friends	9	3
	University Students	52	17.3
	Family	90	30
	Social Media	42	14
	Teacher	27	9
	University Website	26	8.7
	None	54	18

Decision

Participants of FGDs clearly stated their decision-making moment. At the time of taking decision students mostly try to focus on their preferences. Families of participants, educators and other human sources also made the decision for them too. Some relatable quotes have been presented in **Table 14** below.

Table 14. Students' subject selection decision

Sources	Quotes from FGD
Self	<i>'Though my family was forcing me not to take Journalism, but I took. Because I prefer my own choice.'</i> FGD 1
Family	<i>'My family's decision was the final decision for me because I never disobeyed them. I never had to face difficulties after taking their decision'</i> FGD 3
Senior University Student	<i>'There was no knowledgeable person about university subjects in my family. Even I also did not have much knowledge. So, I decided the decision that was taken by a known senior student of Dhaka University'</i> FGD 4

Figure 6 illustrates that the majority of students (59.3%) indicated that they made their decision on their own. Additionally, 28.6% of the respondents mentioned that their family motivated them to choose a subject, while teachers (6.5%), university students (3.6%), and friends (1.8%) also played important roles as motivators in their subject selection.

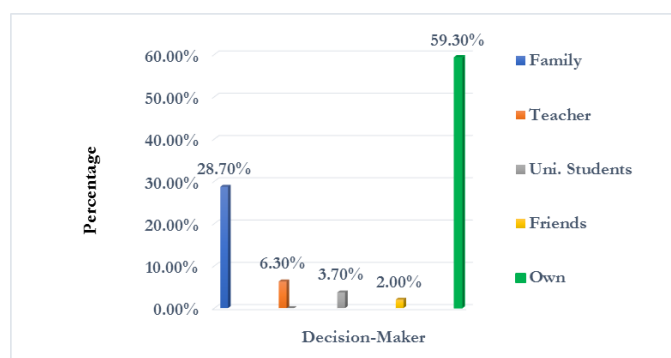


Figure 6. Final decision-makers of choosing study subjects

The Post Decision Evaluation

The participants of this study expressed that they engage in the process of assessing and reviewing the outcomes and consequences of the decisions they have made. The data was collected on a five-point Likert scale, which is considered an interval scale. The mean value of the scale is crucial for determining the outcome of each statement. A mean value of 1 to 1.8 indicates "strongly disagree," 1.81 to 2.60 indicates "disagree," 2.61 to 3.40 indicates "neutral," 3.41 to 4.20 indicates "agree," and 4.21 to 5 indicates "strongly agree."

Table 15. Post decision experiences

Statements	N	Mean	Std. Deviation
1. You are happy with present decision	300	4.20	1.025
2. You are satisfied with human source	300	3.87	1.039
3. You are happy with electric sources	300	4.04	.982
4. You did enough take heed before taking the decision	300	4.41	.947
5. You suffered to get essential information	300	2.31	1.395
6. You are satisfied with the advices from sources	300	4.01	1.100
7. Gender as an issue	300	1.28	.856
8. Family's financial condition mattered	300	2.24	1.501

The results in **Table 15** showed that the majority of students (mean = 4.20) were satisfied with their current decision. Most of the students (mean = 3.87) were satisfied with the human sources they used to gather information. Additionally, most students were satisfied with their electric sources (mean = 4.04). The majority of students (mean = 4.41) believed that they had taken enough care before selecting a subject. Students did not agree (mean = 2.31) that they suffered due to a lack of essential information. The majority of students (mean = 4.01) were satisfied with the advice they received from their sources. In statement seven, gender is not an issue for the students as they strongly disagreed (mean = 1.28). In statement eight, students disagreed (mean = 2.24) that their family's financial condition is a significant factor in their subject selection. They typically receive guidance from their parents, teachers, and other university students. During this process, students often engage in self-reflection to better understand their interests and goals, although they may also be influenced by social expectations. Some relatable quotes have been quoted in **Table 16** below.

Table 16. Students post decision experiences

Experiences Criteria	Quotes from FGD
Subject Selection	<i>'I am very much happy with my decision because I am enjoying the learning on environment.'</i> FGD 2
Satisfaction on Sources	<i>'I am thankful to all the university seniors who guided me through the admission process. Because of their guidance I am studying in a reputed subject like CSE. I think it's my best decision that I heard to their suggestion.'</i> FGD 4
Family Condition Matters	<i>'I myself decided to study in Architecture but now it has been a bit difficult. There are lot of expenses here which my family cannot bear. I am looking forward to give tuition to college or school students.'</i> FGD 1

Discussion

This study investigates the decision-making process of undergraduate students as they face the critical choice of selecting their major for their degree. The research questions aim to understand the sequential steps students typically undergo during this decision-making journey and the significant factors influencing their choices. Additionally, the study sheds light on the sources or factors that contribute to making the decision-making process more manageable and less daunting for students.

Most of the existing decision-making process models discuss either a problem recognition or pre-search stage is the initial steps of a decision-making process (Towers & Towers, 2018; Lemon & Verhoef, 2016; Maringe & Carter, 2007). This study identified a similar decision-making process and identified some factors associated with this stage that led students to begin their decision-making process. The leading step, Identify the Desired Subject, involves students becoming acquainted with the university's approach to education and gaining awareness of potential majors. In this initial step, students actively seek information about universities and subjects. During this process, students predominantly rely on electronic sources like Google search, Facebook, university webpages, and brochure-type sources to gather information. With Identify the Desired Subject as the initial phase, this study found nine sequential steps that students undergo when selecting their undergraduate subjects. These findings align with Towers and Towers' (2018) research, which highlights the Problem recognition (pre-search behavior/early thoughts), Information search, Evaluation (application) stage, Decision stage (course selection), and post-purchase evaluation steps of the decision-making process.

This study also found that one of the critical phases' students go through is the Comparison between Subjects step when choosing a major. During this stage, students explore multiple options and have not yet arrived at a final decision. This pattern closely resembles the evaluation stage in models such as Court et al. (2009) and Blackwell et al. (2001). During this phase, students meticulously consider their motives, compare various options, assess information and sources, take university characteristics into account, and importantly, experience mental pressure while making their choice. This study recognizes two subsequent stages in addition to the Comparison between Subjects stage: the final Decision-making phase and the Post-decision Evaluation. During the decision-making phase, students make their final choice and enroll in the selected major. After enrollment, they undergo a reevaluation process to confirm the appropriateness of their decision. On the contrary, Protivnak and Yensel (2017) and Butner et al. (2001) argued against the existence of additional stages beyond the comparison between subjects' stage in the student's decision-making process. They contend that the decision-making phase and post-decision evaluation are not separate stages but rather part of the same process. According to their perspective, once students have compared the different options available to them, they make a final choice and enroll in the selected major. After enrollment, they may experience a reevaluation process, but this can be seen as a continuation of the decision-making phase rather than a distinct stage.

Participants in this study indicate their family influenced their decision significantly. Among them, 41% said that family played a major role in selecting their major. Additionally, 29% of students said that they selected their subject on their own. In contrast, Beggs et al. (2008) found that students prioritize their personal interests at most when they make decisions about their careers. This study also found that teachers have a notable impact on the decision-making of students. After the teacher, students report that known university students also impact their decision-making process. Vinciarelli, et al. (2019) and Babad and Taybe (2003) found that peers, teachers, and mentors are significantly influencing students' decision-making processes. Conversely, Siann et al. (1998) argued that

students take courses based on career possibilities, financial requirements, and the availability of desirable options. Additionally, Sellami et al. (2017) identified that financial aid, job opportunity after graduation, of students. On the other hand, Joseph et al. (2012) found that students make decisions based on field reputation, personal interaction, facilities, and cost considerations. This study shows that when students compare two subjects, they pay attention to factors like job prospects and career choices. In the end, students want to make choice that help their long-term professional goals. (Zaheer et al., 2018).

Conclusion

This study investigates how undergraduate students select their undergraduate subjects for their studies. It is identified that students were go through few steps and influenced by some factors. By shedding light on the undergraduate subject selection process, this study fills the gaps in the literature on these particular issues. However, this study focuses mainly on a linear decision-making process. It overlooks the important role of social and cultural influences in students' decision-making processes. Factors such as the perception of the job market (government versus private jobs), job satisfaction, and the socially perceived position of the subject could have a significant impact on the decision to choose a major. Future research should investigate these social influences to get a better understanding of the students' decision-making process. On the other hand, a case study method could be employed to examine individual perspectives on this issue. Nevertheless, the current study will assist students, educational policymakers, and universities in understanding the process a student goes through when selecting a major.

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Conflict of Interest

The authors declare no conflicts of interest.

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