Understanding Student Satisfaction and Expectations Alignment in their College Courses

A CIA-3 Report Submitted by

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INTRODUCTION

Every student has a reason to choose a particular degree and have certain expectations while choosing. With time either the expectations are fulfilled or not. In this research, we will carry out a sampling survey among students enrolled at CHRIST (Deemed to be University) to understand their anticipated desires regarding their courses before enrollment, and subsequently, to evaluate their satisfaction levels post-enrollment and the reasons behind the same. Understanding student expectations is crucial as it aids in designing a curriculum that aligns with their needs, benefiting both the institution and its students. This initiative aims to enhance student engagement, improve outcomes, and foster a mutually beneficial relationship between the university and its students.

OBJECTIVE OF THE STUDY

The study's goal is to explore what students expected from their respective courses at CHRIST (Deemed to be University) Lavasa before they joined and then assess how satisfied they are after starting their studies.

DEFINING THE POPULATION

The population for the study are the students currently enrolled in different courses provided by the University. This comprises a total of 2108 students.

SAMPLING FRAME

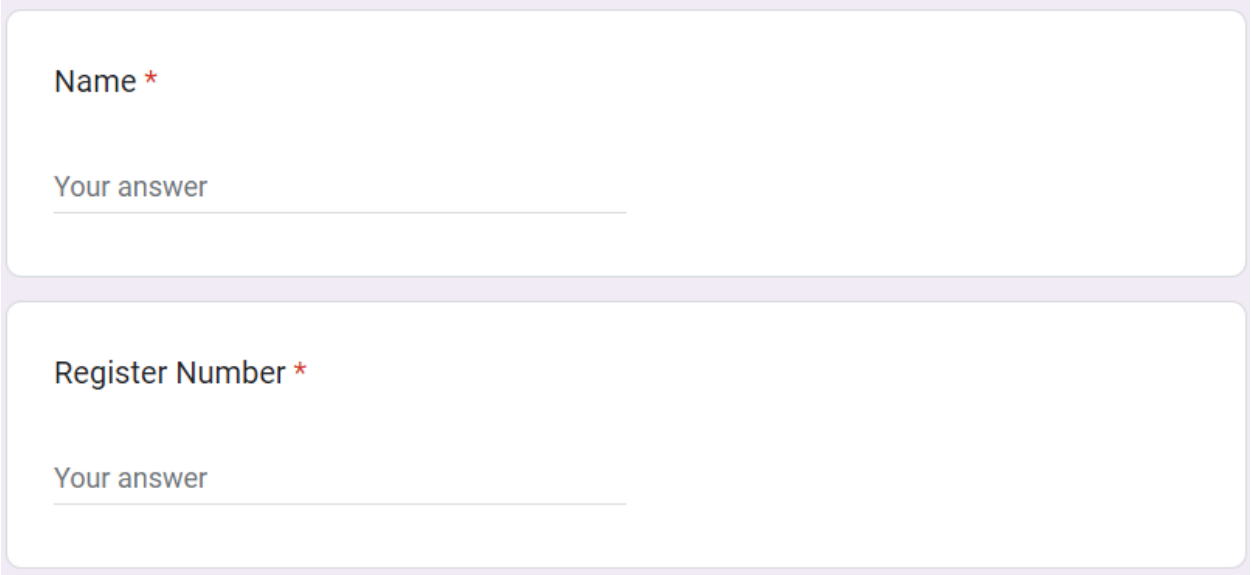
Link for the Sampling Frame:
https://docs.google.com/spreadsheets/d/1wrOGPvcH3rKeHSLf8gJ4K_1m8unqfjOdgsMa524lPbY/edit#gid=0

QUESTIONNAIRE

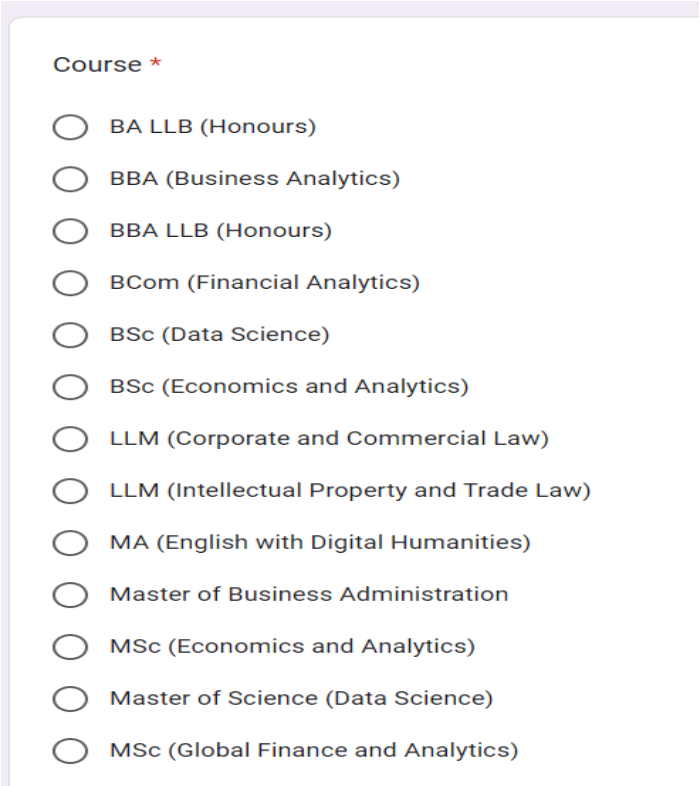
FORM LINK:
https://docs.google.com/forms/d/1KCQCTJ0V0ayHgwyvzy5_XawkjOfEnnk24tHqCRq7P1s/edit

The following questions were asked in the questionnaire -

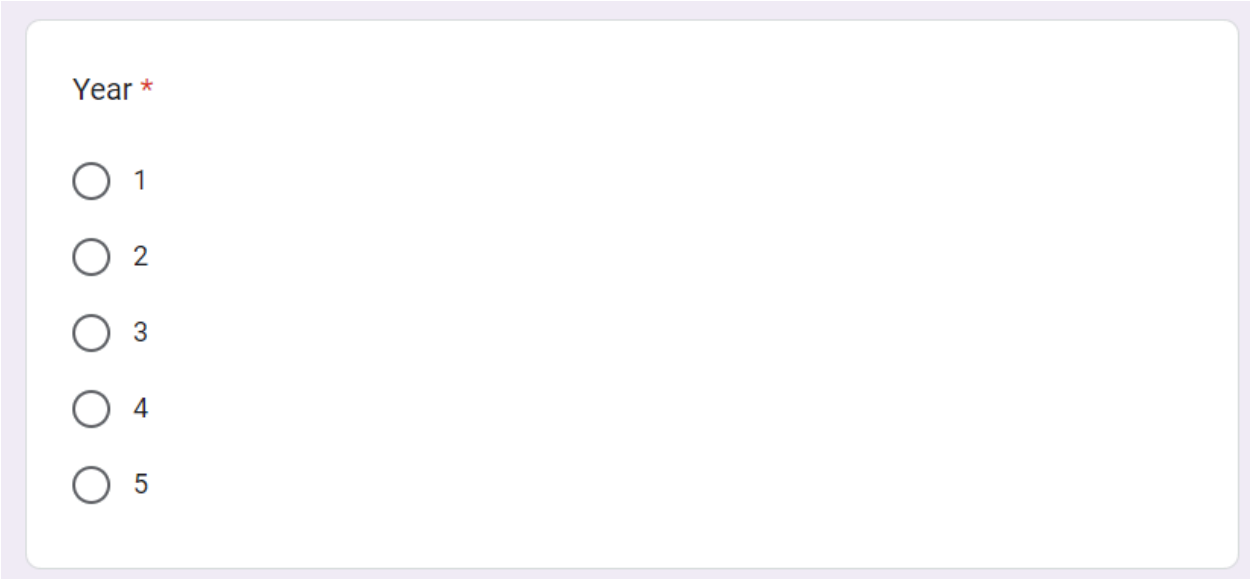
- **This is the information of the student to keep track of people who have filled the forms.**



- **The question was asked to understand which department the students belong to for future course-specific studies.**



- **This is the year in which the student is studying in.**



- **Factors Influencing Course Selection**

What were your main reasons for choosing your current course/degree? *

- [ ] Placement
- [ ] Geographical Reasons
- [ ] Course Structure
- [ ] You know a person who is studying here
- [ ] College Reputation
- [ ] Recommendation from peers/teachers/relative
- [ ] Affordable Tuition Fees
- [ ] No other choice
- [ ] Passionate about the course
- [ ] Other: _____

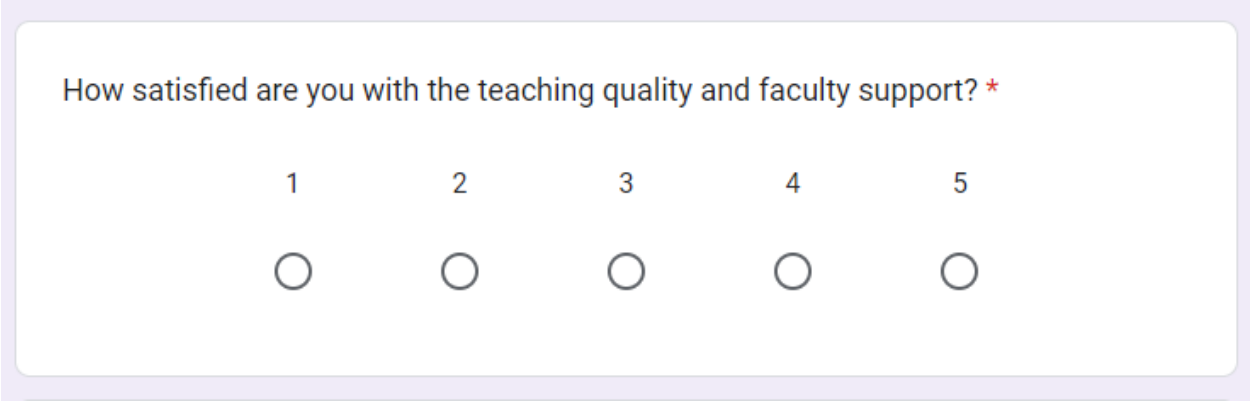
- **Expected Degree Benefits and Outcomes**

What specific outcomes or benefits did you expect from pursuing this degree? *

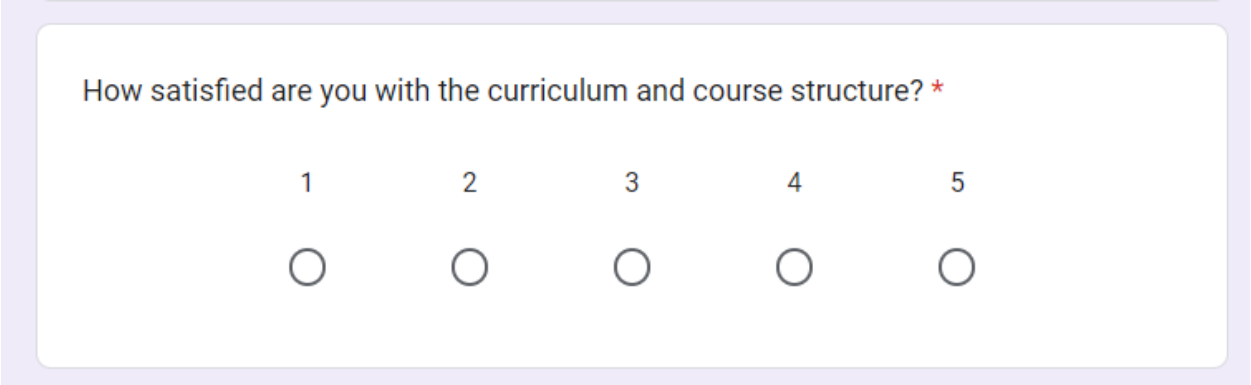
- [ ] Placement
- [ ] Personal Growth
- [ ] Academic Challenge
- [ ] Good Networking Opportunities
- [ ] Good Faculty Support
- [ ] Contribution to the Society
- [ ] Other: _____

❖ These questions sheds light on the anticipated objectives individuals aim to accomplish by the conclusion of the course. It offers a glimpse into their expectations and aspirations, providing valuable insights into what they seek to attain from their educational journey.

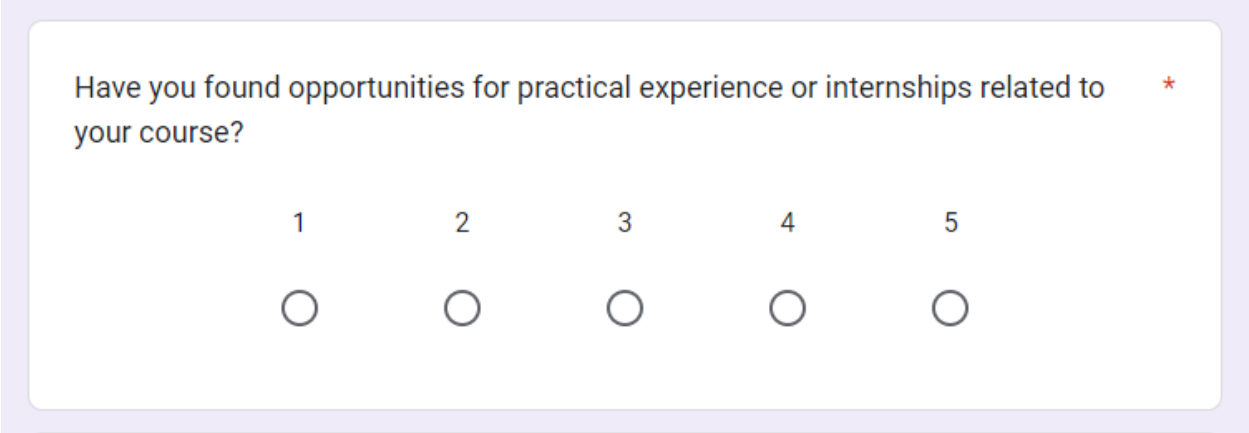
- **This question shows their happiness with the teaching staff and their support.**



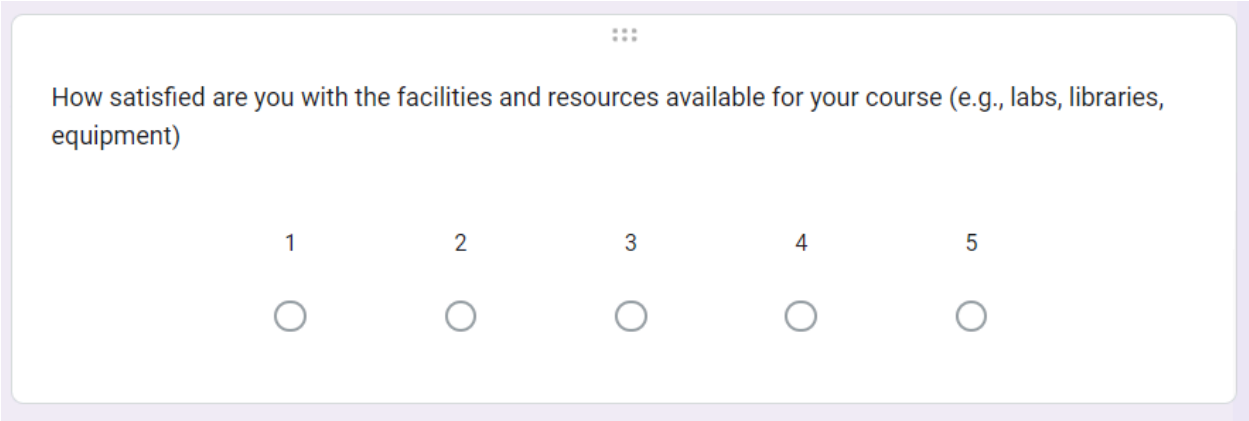
- Satisfaction with Course Structure and Knowledge Delivery



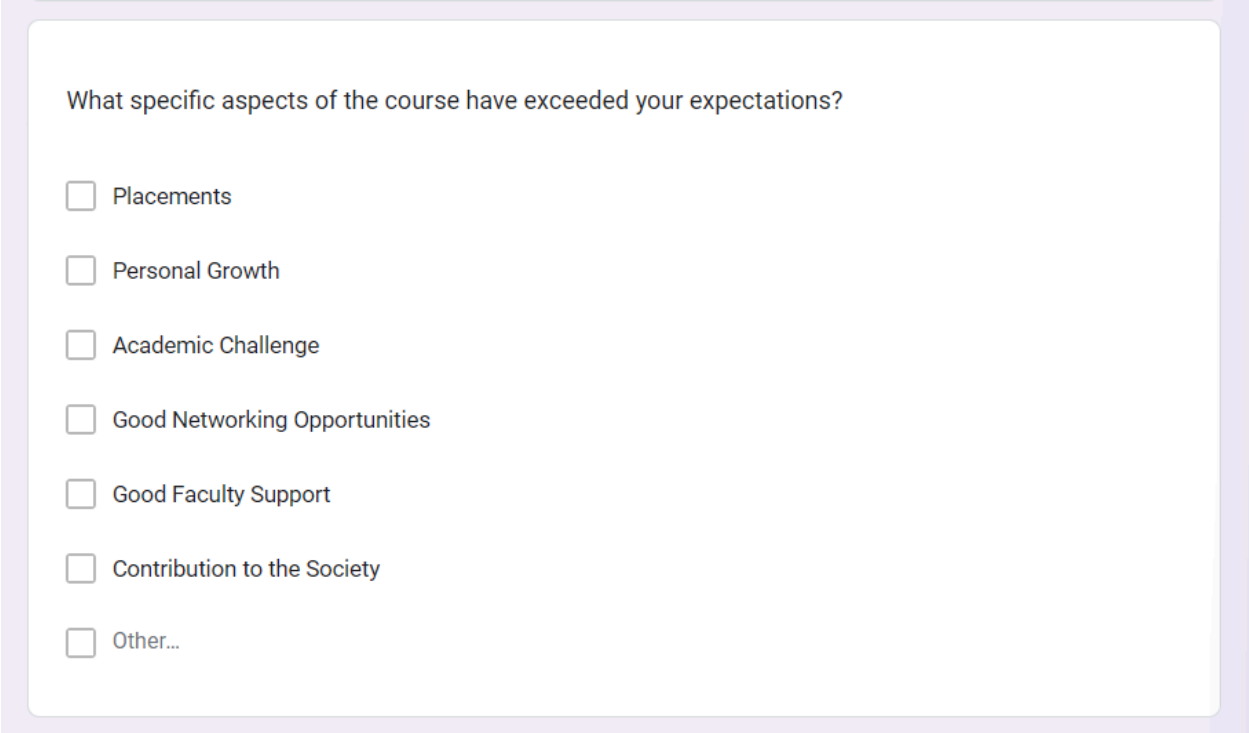
- Opportunities for Practical Experiences and Student Satisfaction



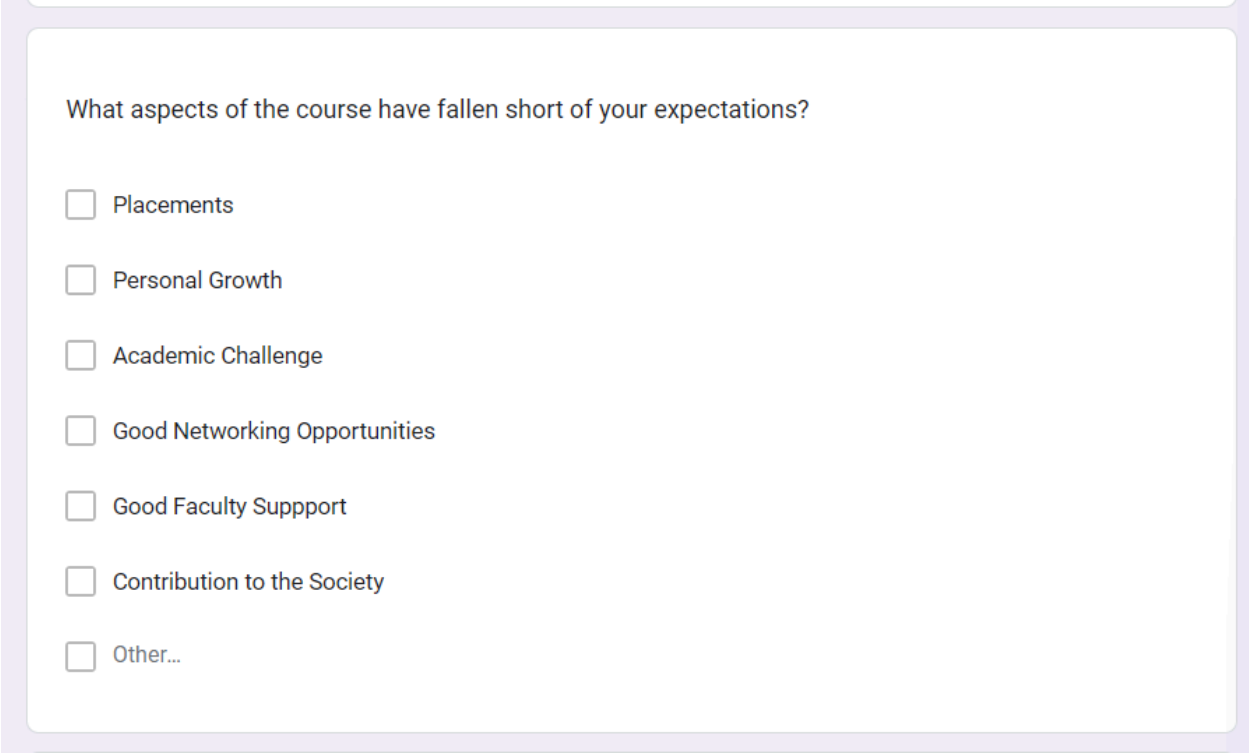
- Satisfaction with College Facilities Alignment with Course Interests



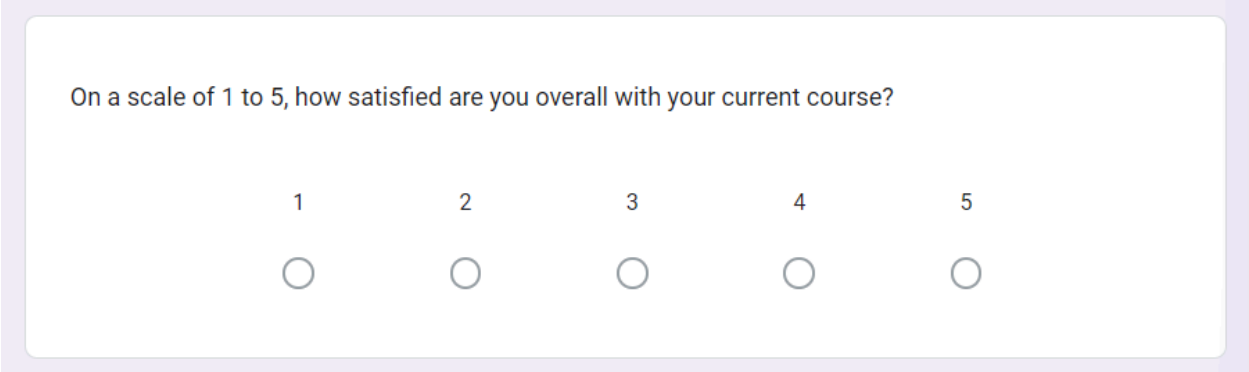
- Exceeding Expectations: College Performance Highlights.



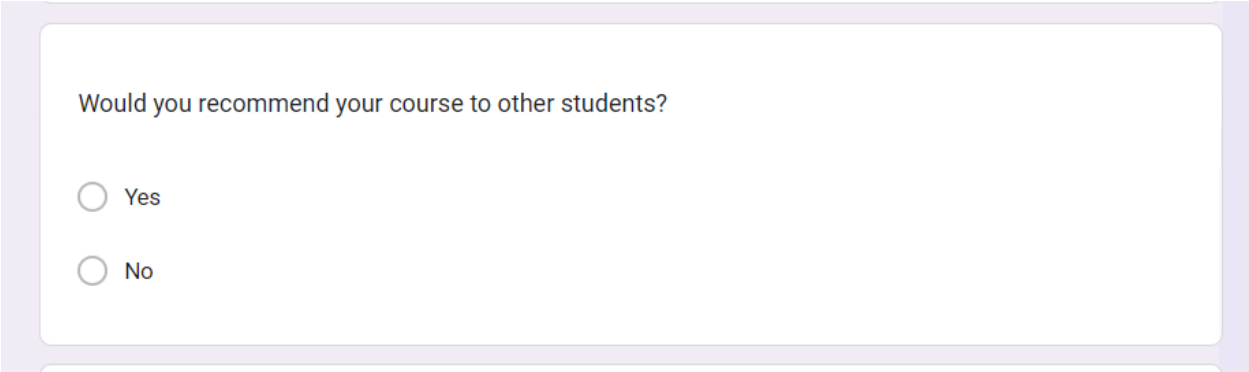
- Areas for Improvement: College Shortcomings Identification



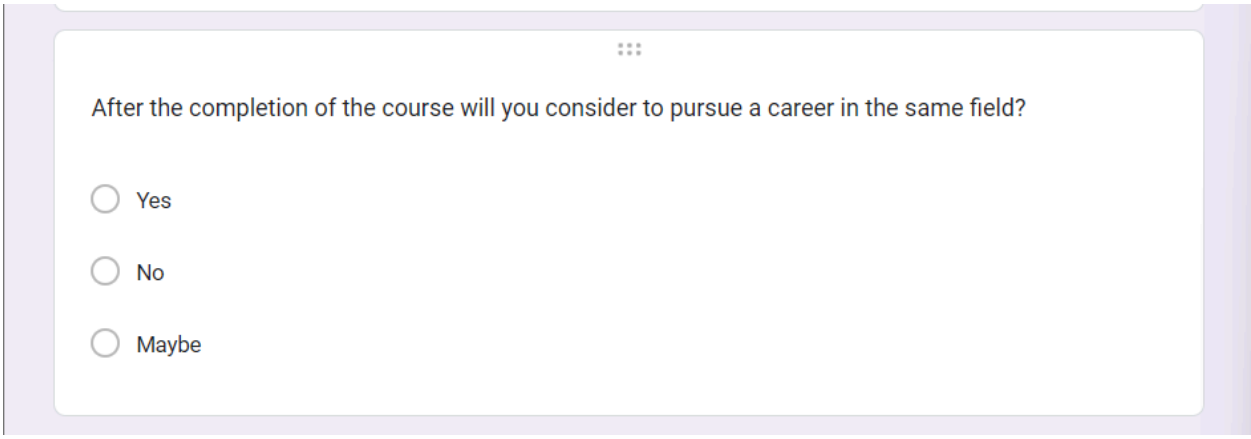
- Overall Course Rating: to get to know about their views on the



- Course Recommendation and Word-of-Mouth Publicity



- This question asks for if they will continue their work in the same field or not. This question has been asked to know their interest in the field. Because interest creates a bias in how things are perceived. There are chances that if a person is interested in a field they are more likely to like the course.



- This question asks for what percent chances do they feel that they will continue in the same field. This question is asked because people are not sure about their future choices so just to gain a little more clarity.

What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don't add % sign)

Short answer text

METHOD OF COLLECTING INFORMATION

The survey utilized a **mailed questionnaire** method for data collection, chosen for several reasons tailored to the university setting:

1. Data Organization: this approach provides us with an organized and set data for further analysis and interpretation using various tools.

2. Contact Information Collection: using the database and sending the questionnaire to the interviewees, makes the process more streamlined and efficient.

3. Time Efficiency: mailing the questionnaires offered a swift and practical method of gathering data if compared with other data collection methods..

4. Large Sample Size: the population was all the students of CHRIST University, Lavasa, which is 2110 students excluding us, which will be very difficult to collect data from, so this method makes it more easy and efficient for us to collect the responses from the students from each department.

5. Privacy and Anonymity: most of the students at the University don't feel comfortable answering or expressing their true opinions in front of others. The feeling of anonymity helps gather unbiased data from the respondents.

6. Convenience: Students lead busy lives, and the flexibility of completing a questionnaire at their own pace and convenience, rather than scheduling interviews or observations, may lead to higher response rates and more comprehensive data collection.

Why did we not use other methods?

Interview Method - More than 300 people needed to be interviewed which required a lot of time, and there were no resources available. Also people would not have been ready to wait back and reply. It would also have been difficult to access the people.

Observation Method - every student’s satisfaction and expectations could not be understood by observing because those are internal feelings and no external factors directly affect the satisfaction/dissatisfaction.

NON - RESPONDENTS

There are two ways to deal with non - respondents -

1) **Perform the sampling again** - Due to time constraints sampling could not have been done again. Also, if people were not ready to reply in the first place, they would not have replied again.
2) **Try Adjusting weights** - In this, we adjust the weights in such a way that respondents are given more weightage as compared to the respondents. We will be working with this method.

SELECTION OF PROPER SAMPLING DESIGN

In this survey, we will advocate multistage sampling. The sampling has to be done in three stages.

STAGE 1:

Simple Random Sampling - We could not use this sampling because the population consist of variation. In the survey, representation from each course is necessary. But if we had used simple random sampling, there could have been chances that certain courses were being overrepresented and some other courses were being underrepresented.

Systematic Random Sampling - Using this sampling we could have made sure that there is representation from each course. But, the k value was not an integer, leading to circular systematic sampling. Yet this sampling has no statistic that is an unbiased parameter estimator.

Cluster Sampling - In this survey, the course has no relation with any cluster. So it cannot be used.

Stratified Random Sampling - The variance/ diversity in the data will be captured in this type of sampling. Also, this helps us do a comparative study within courses.

STAGE 2:

Simple Random Sampling - Courses keep changing every year. But in SRS, there are chances that all the samples are from the same year. Hence, we cannot use this.

Systematic Random Sampling - Using this sampling we could have made sure that there is representation from each year. But, the k value was not integer, leading to circular systematic sampling. Yet this sampling has no statistic that is an unbiased parameter estimator.

As discussed earlier, cluster sampling would not be helpful.

Stratified Random Sampling - The variance/ diversity in the data will be captured in this type of sampling. Also, this will help us do a comparative study within courses.

STAGE 3:

Stratified Random Sampling - Stratifying/ Dividing the sample would be redundant and make analyzing complex.

Systematic Random Sampling - k value will not be an integer leading to circular systematic sampling. Yet this sampling has no statistic which is an unbiased estimator of the parameter.

Simple Random Sampling - Units will be selected randomly which will keep the survey unbiased. Also statistics like mean, variance are unbiased estimators of parameters in simple random sampling.

FIELD WORK / METHODOLOGY

MOTIVATION - Several colleges in India offer all the courses that are being offered by CHRIST(Deemed to be University), Lavasa, Pune. but what are the factors and expectations of a student from the university before joining the course. Is the college able to fulfill those expectations? The college tries their level best to stand out on the facilities, curriculums, placements, faculty support and administration support to the students, but is it worth it, where do they need to make amends to satisfy or narrow down the bridge between market expectations and student expectation as a whole. We are trying to find the answer for the same question via this study. We are trying to find out the expectations from the students enrolling in different courses and at what different stages is college able to fulfill those fields and where do they need to improve to provide a better level of satisfaction to the students. Additionally, we are trying to find out what proportion of students that would like to pursue their career in the fields that they have chosen to study, which gives us an enhanced point of view of the students and we can find a pattern between the students and their expectations to help those students explore new fields, get better clarity about the future and gain essential skills.

GETTING SAMPLING FRAME - The sampling frame was cumulatively collected from various sources - academic offices, contacting CR's and database from a few events.

SAMPLING

Sample size determination - Sample size was determined using Slovin's formula.

$$n = \frac{N}{1 + (Ne^2)}$$

Here the value of N (population size) is 2108. e, which is the error defined to be 0.05. This means that only a 5% error is permitted in the survey. On calculating the value of n was obtained to be 337.

Sampling - First step was to calculate the number of students enrolled in each course. This was done in Excel using the formula "=COUNTIF($E$3:$E$2110,G3)".

Course	Count
BA LLB (Honours)	284
BBA (Business Analytics)	740
BBA LLB (Honours)	261
BCom (Financial Analytics)	244
BSc (Data Science)	87
BSc (Economics and Analytics)	91
LLM (Corporate and Commercial Law)	8
LLM (Intellectual Property and Trade Law)	4
MA (English with Digital Humanities)	4
Master of Science (Data Science)	196
Master of Business Administration	144
MSc (Economics and Analytics)	27
MSc (Global Finance and Analytics)	18
TOTAL	2108

- Then proportional allocation was used (variance was not known for optimum allocation) to find the size of each stratum sample. This was done using the formula $\frac{n_i}{n} = \frac{N_i}{N}$, where n_i is the size of the ith sample stratum, n is the sample size, N_i is the size of ith sample, and N is the population size. This was done in Excel using the formula "=($H$18*H3)/$H$16". These values were then rounded off using the "=ROUNDOFF" function.
- Secondly, we found the number of students in each class using the Excel functionality "COUNTIF" function.

	G	H	I	J	K
	Course	Count	Proportional Allocation	Rounded sample size value	
	BA LLB (Honours)	284	45.40227704	45	
	BBA (Business Analytics)	740	118.3017078	118	
	BBA LLB (Honours)	261	41.72533207	42	
	BCom (Financial Analytics)	244	39.00759013	40	
	BSc (Data Science)	87	13.90844402	14	
	BSc (Economics and Analytics)	91	14.54791271	15	
	LLM (Corporate and Commercial Law)	8	1.278937381	1	
	LLM (Intellectual Property and Trade Law)	4	0.6394686907	1	
	MA (English with Digital Humanities)	4	0.6394686907	1	
	Master of Science (Data Science)	196	31.33396584	31	
	Master of Business Administration	144	23.02087287	23	
	MSc (Economics and Analytics)	27	4.316413662	4	
	MSc (Global Finance and Analytics)	18	2.877609108	3	
	TOTAL	2108			

- Later we found the total number of students in each year by adding on Excel, this was done using the Count() function. We found the total count of all the students from each of the sections of the classes from different departments.

Classes	Count
10BALLB-L A	29
8BALLB-L A	38
6BALLB-L A	67
4BALLB-L A	80
2BALLB-L A	70
6BBA ANLT A	53
6BBA ANLT B	56
6BBA ANLT C	50
6BBA ANLT D	50
3BBA ANLT A	58
4BBA ANLT B	55
4BBA ANLT C	55
4BBA ANLT D	55
4BBA ANLT E	56
2BBA ANLT B	64
2BBA ANLT A	64
2BBA ANLT C	62
2BBA ANLT D	62
10BBALLB-L A	24
8BBALLB-L A	51
6BBALLB-L A	65
4BBALLB-L A	60

Classes	Population	Ni
5th Year BA LLB	284	29
4th Year BA LLB	284	38
3rd Year BA LLB	284	67
2nd Year BA LLB	284	80
1st Year BA LLB	284	70
3rd Year BBA	740	209
2nd Year BBA	740	279
1st Year BBA	740	252
5th Year BBA LLB	261	24
4th Year BBA LLB	261	51
3rd Year BBA LLB	261	65
2nd Year BBA LLB	261	60
1st Year BBA LLB	261	61
3rd Year BCom	244	118
2nd Year BCom	244	88
1st Year BCom	244	38
3rd Year BSc DS	87	30
2nd Year BSc DS	87	36
1st Year BSc DS	87	21
3rd Year BSc EA	91	39
2nd Year BSc EA	91	34
1st Year BSc EA	91	18

Later proportional allocation was done to obtain the size of each sub stratum. This was done using the formula $\frac{n_i}{n} = \frac{N_i}{N}$, where n_i is the size of the ith sample stratum, n is the sample size, N_i is the size of i^{th} sample, and N is the population size.

Classes	Population	Ni	n	Proportional Allocation	Rounded
5th Year BA LLB	284	29	45	4.595070423	5
4th Year BA LLB	284	38	45	6.021126761	6
3rd Year BA LLB	284	67	45	10.61619718	11
2nd Year BA LLB	284	80	45	12.67605634	13
1st Year BA LLB	284	70	45	11.0915493	11
3rd Year BBA	740	209	118	33.32702703	33
2nd Year BBA	740	279	118	44.48918919	44
1st Year BBA	740	252	118	40.18378378	40
5th Year BBA LLB	261	24	42	3.862068966	4
4th Year BBA LLB	261	51	42	8.206896552	8
3rd Year BBA LLB	261	65	42	10.45977011	10
2nd Year BBA LLB	261	60	42	9.655172414	10
1st Year BBA LLB	261	61	42	9.816091954	10
3rd Year BCom	244	118	40	19.3442623	19
2nd Year BCom	244	88	40	14.42622951	14
1st Year BCom	244	38	40	6.229508197	6
3rd Year BSc DS	87	30	14	4.827586207	5
2nd Year BSc DS	87	36	14	5.793103448	6
1st Year BSc DS	87	21	14	3.379310345	3
3rd Year BSc EA	91	39	15	6.428571429	6
2nd Year BSc EA	91	34	15	5.604395604	6
1st Year BSc EA	91	18	15	2.967032967	3

After this simple random sampling was done for each stratum using Python random number generator, user defined function.

```
import random

def generate_random_without_repetition(start, end, limit):
    numbers = list(range(start, end+1))
    random.shuffle(numbers)
    return sorted(numbers[:limit])

start_num = 1720
end_num = 1723
limit = 1
random_numbers = generate_random_without_repetition(start_num, end_num, limit)
print(random_numbers)
```

```
[1723]
```

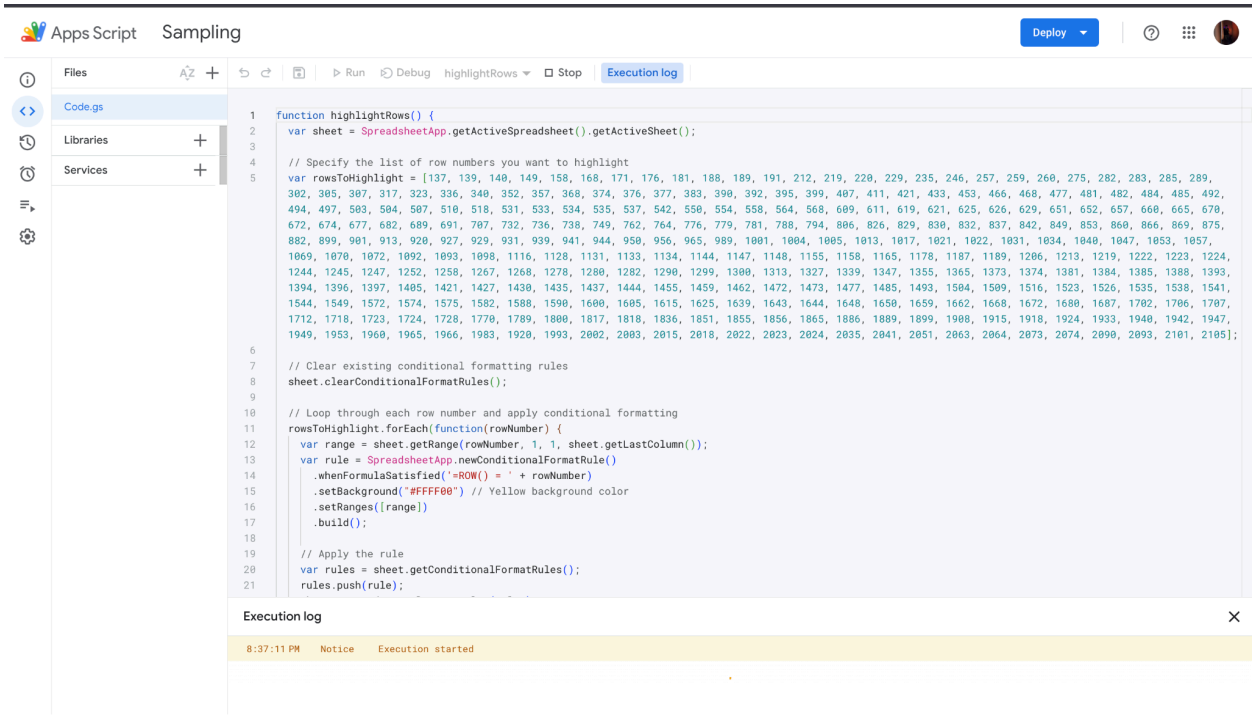
```
import random

def generate_random_without_repetition(start, end, limit):
    numbers = list(range(start, end+1))
    random.shuffle(numbers)
    return sorted(numbers[:limit])

start_num = 1724
end_num = 1919
limit = 18
random_numbers = generate_random_without_repetition(start_num, end_num, limit)
print(random_numbers)
```

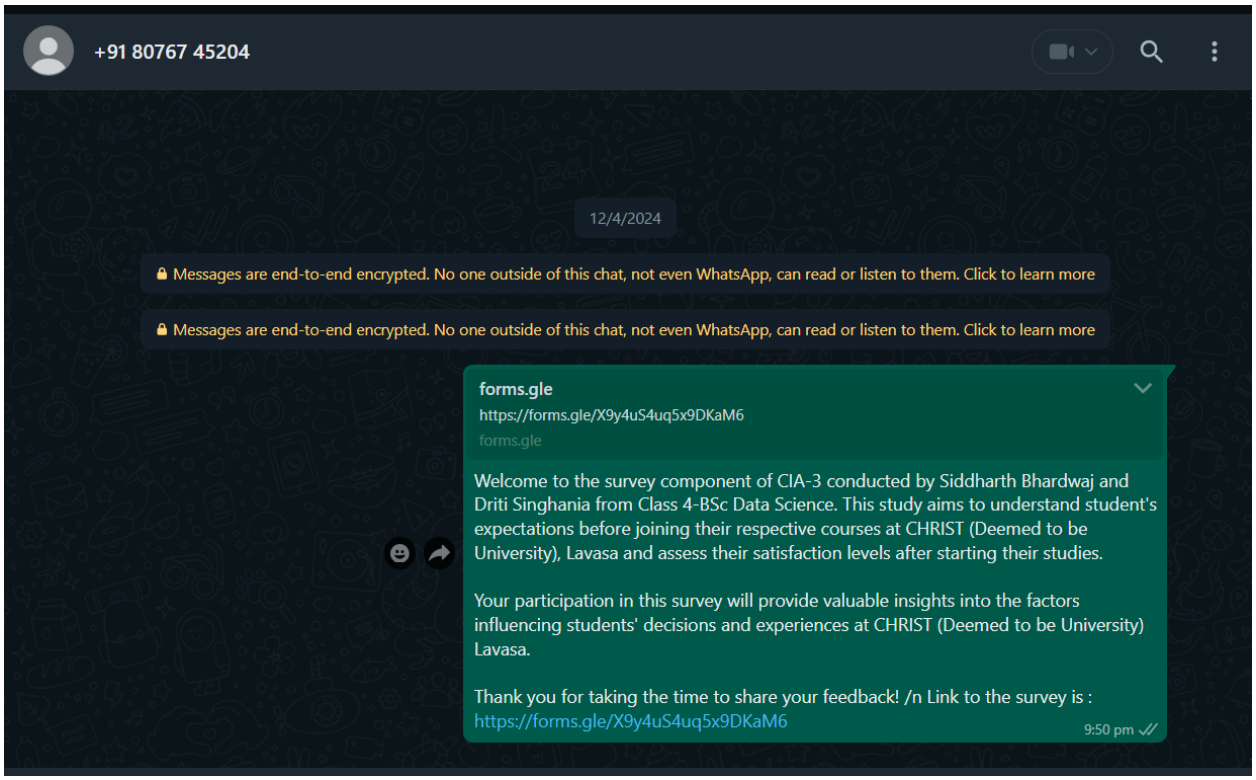
```
[1724, 1728, 1770, 1789, 1800, 1817, 1818, 1836, 1851, 1855, 1856, 1865, 1886, 1889, 1899, 1908, 1915, 1918]
```

Units with these index numbers were selected. Below is a glimpse of the selected sample.

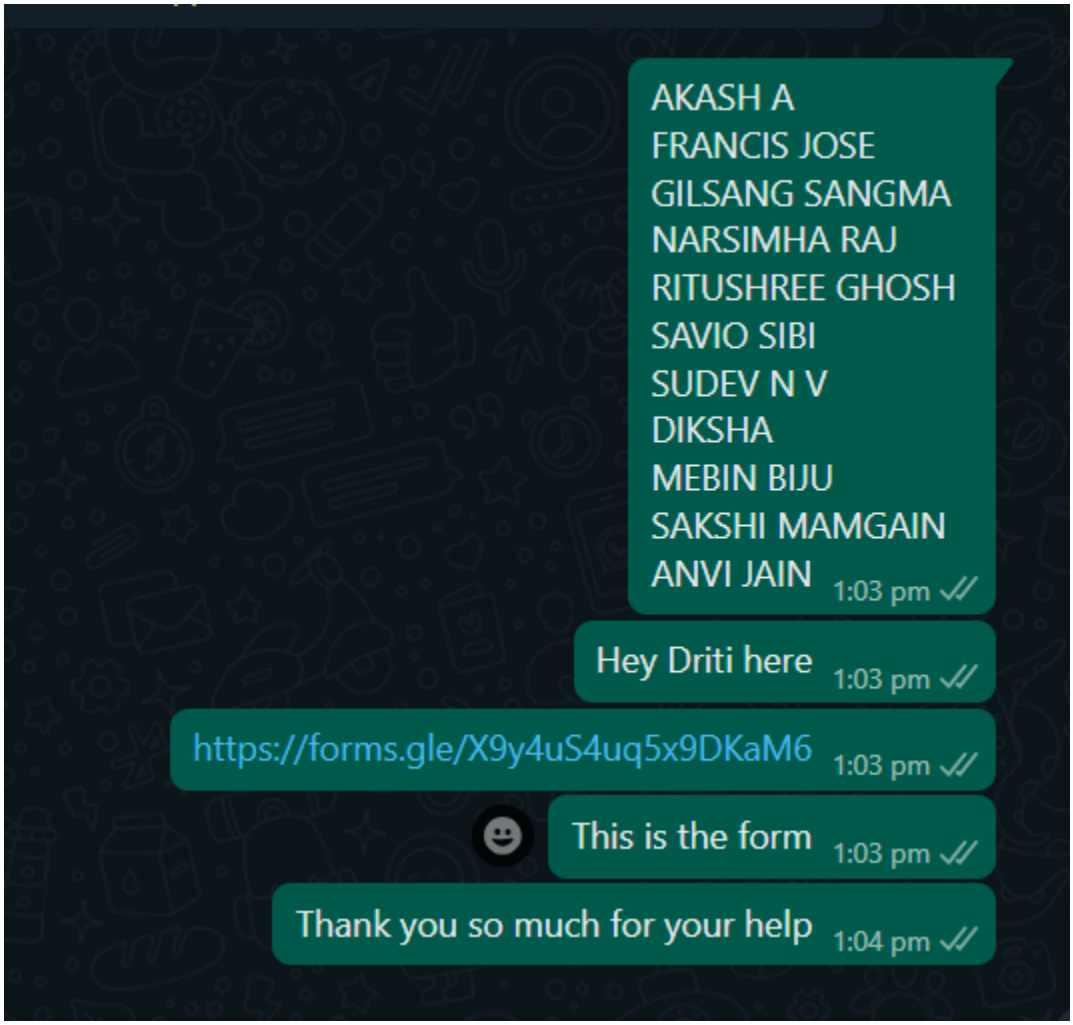
Register Numbe	Name	Year	Course
19113007	ASHINA SAKEER HUSSAIN	5	BA LLB (Honours)
19113010	CHHAVI PATHAK	5	BA LLB (Honours)
19113018	HARIVARSHAN M	5	BA LLB (Honours)
19113038	SHREEJEE CHAUDARY	5	BA LLB (Honours)
19113043	SRIJOY MUKHERJEE	5	BA LLB (Honours)
20113010	ARYA S PANIKKER	4	BA LLB (Honours)
20113013	CHITTILAPPILLY LISA MARIE PAULSIL	4	BA LLB (Honours)
20113053	SHOILY CHAKRABORTY	4	BA LLB (Honours)
20113056	SHRUTI GIRI GOSWAMI	4	BA LLB (Honours)
20113064	TANVEEN KAUR	4	BA LLB (Honours)
20113082	KUNAMALLA PRERANA	4	BA LLB (Honours)
21113012	ARUNDHATHI VIMAL	3	BA LLB (Honours)
21113015	ASHWIN S KUMAR	3	BA LLB (Honours)
21113026	ISHANI KAUSHIK	3	BA LLB (Honours)
21113030	KATHRYN FAITH GRACIA PHILIP	3	BA LLB (Honours)
21113047	PRAKRITI DABRAL	3	BA LLB (Honours)
21113051	RASHI SAHU	3	BA LLB (Honours)
21113054	RISHABH AGRAWAL	3	BA LLB (Honours)
21113074	SHRIHARI R	3	BA LLB (Honours)
21113075	SNEHAL EKKA	3	BA LLB (Honours)
21113078	SPARSH AHUJA	3	BA LLB (Honours)
21113081	SURYANK PRATAP SINGH	3	BA LLB (Honours)

After the selection of the sample the data was sent to the respective people by getting the contact details of each student. It was done via WhatsApp. Messages were automated and sent as there were many people to whom messages had to be sent.





When there were many non-respondents, we contacted the CR's of each class, passed on the list and asked them to remind respective students to fill the forms.



Once a considerable amount of data that is around 70% of responses were collected we started the process of analyzing and obtaining insights from the data.

SUMMARY AND ANALYSIS

```
[22]: import pandas as pd

[23]: df = pd.read_csv("responses.csv")
      df.head()
```

[23]:

	Timestamp	Email Address	Name	Register Number	Course	Year	What were your main reasons for choosing your current course/degree?	What specific outcomes or benefits did you expect from pursuing this degree?	How satisfied are you with the teaching quality and faculty support?	How satisfied are you with the curriculum and course structure?	Have you found opportunities for practical experience or internships related to your course?	(e
0	4/12/2024 20:52:50	hariharan09080706@gmail.com	Hari Haran	23111423.0	BBA (Business Analytics)	1	College Reputation	Placement	3	3	3.0	
1	4/12/2024 21:23:18	shrutimanjarimishra@gmail.com	Shruti Manjari Mishra	21111055.0	BCom (Financial Analytics)	3	Placement	Placement, Personal Growth, Contribution to th...	3	2	3.0	
2	4/12/2024 21:52:54	kirti.sharma@bds.christuniversity.in	Kirti Sharma	22110217.0	BSc (Data Science)	2	Course Structure, Recommendation from peers/te...	Placement	3	2	2.0	
3	4/12/2024 21:53:27	sejal.s@bds.christuniversity.in	Sejal	22112034.0	BSc (Data Science)	2	You know a person who is studying here	Placement	3	3	3.0	
4	4/12/2024 22:02:23	moksh.kushwaha@bds.christuniversity.in	Moksh Kushwaha	22112036.0	BSc (Data Science)	2	No other choice	Personal Growth	4	4	4.0	

Importing the dataset

CLEANING

Columns like timestamp, email address and name were removed because they would not add any input in the analysis

Cleaning the data

```
## Dropping the redundant data columns which are not required for the analysis and exploration
df.drop(["Timestamp", "Email Address"],axis = 1, inplace=True)
```

```
df.head()
```

Year	What were your main reasons for choosing your current course/degree?	What specific outcomes or benefits did you expect from pursuing this degree?	How satisfied are you with the teaching quality and faculty support?	How satisfied are you with the curriculum and course structure?	Have you found opportunities for practical experience or internships related to your course?	How satisfied are you with the facilities and resources available for your course (e.g., labs, libraries, equipment)	What specific aspects of the course have exceeded your expectations?	What aspects of the course have fallen short of your expectations?	On a scale of 1 to 5, how satisfied are you overall with your current course?	Would you recommend your course to other students?	After the completion of the course will you consider to pursue a career in the same field?	What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don't add % sign)
1	College Reputation	Placement	3	3	3.0	3	Contribution to the Society	Academic Challenge	3.0	No	Maybe	50
3	Placement	Placement, Personal Growth, Contribution to th...	3	2	3.0	2	Personal Growth, Academic Challenge	Placements, Good Networking Opportunities	3.0	No	No	10
2	Course Structure, Recommendation	Placement	3	2	2.0	3	Personal Growth	Placements, Academic Challenge, Good	3.0	Yes	No	10

Univariate Analysis

[14]:
```
# Summary statistics for numerical variables
print(df.describe())
```

```
       Register Number        Year  \
count     2.420000e+02  243.000000
mean      2.199456e+07    2.263374
std       1.022904e+06    1.104357
min       1.911301e+07    1.000000
25%       2.111234e+07    1.000000
50%       2.211232e+07    2.000000
75%       2.311145e+07    3.000000
max       2.312432e+07    5.000000

       How satisfied are you with the teaching quality and faculty support?  \
count                                         243.000000
mean                                            3.353909
std                                             1.007336
min                                             1.000000
25%                                             3.000000
50%                                             3.000000
75%                                             4.000000
max                                             5.000000

       How satisfied are you with the curriculum and course structure?  \
count                                         243.000000
mean                                            3.382716
std                                             1.002904
min                                             1.000000
25%                                             3.000000
50%                                             4.000000
75%                                             4.000000
max                                             5.000000

       Have you found opportunities for practical experience or internships related to your course?  \
count                                         242.000000
mean                                            3.231405
std                                             1.136058
min                                             1.000000
25%                                             3.000000
50%                                             3.000000
75%                                             4.000000
max                                             5.000000

       How satisfied are you with the facilities and resources available for your course (e.g., labs, libraries, equipment)  \
count                                         243.000000
mean                                            3.411523
std                                             1.073435
min                                             1.000000
25%                                             3.000000
50%                                             4.000000
75%                                             4.000000
max                                             5.000000

        On a scale of 1 to 5, how satisfied are you overall with your current course?
count                                         242.000000
mean                                            3.413223
std                                             0.870631
min                                             1.000000
25%                                             3.000000
50%                                             4.000000
75%                                             4.000000
max                                             5.000000
```

```
# Count of unique values in each column
df.nunique()
```

```
Name                                                                                                  241
Register Number                                                                                       239
Course                                                                                                 12
Year                                                                                                    5
What were your main reasons for choosing your current course/degree?                                  101
What specific outcomes or benefits did you expect from pursuing this degree?                           54
How satisfied are you with the teaching quality and faculty support?                                    5
How satisfied are you with the curriculum and course structure?                                         5
Have you found opportunities for practical experience or internships related to your course?            5
How satisfied are you with the facilities and resources available for your course (e.g., labs, libraries, equipment)     5
What specific aspects of the course have exceeded your expectations?                                   39
What aspects of the course have fallen short of your expectations?                                     33
 On a scale of 1 to 5, how satisfied are you overall with your current course?                          5
Would you recommend your course to other students?                                                      2
After the completion of the course will you consider to pursue a career in the same field?              3
What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don't add % sign)     29
dtype: int64
```

HANDLING MISSING VALUES

Dropping the Missing values as it is lesser than 5% of the data.

```
df.isna().sum()
```

```
Name                                                                                                  0
Register Number                                                                                       1
Course                                                                                                0
Year                                                                                                  0
What were your main reasons for choosing your current course/degree?                                  1
What specific outcomes or benefits did you expect from pursuing this degree?                          0
How satisfied are you with the teaching quality and faculty support?                                  0
How satisfied are you with the curriculum and course structure?                                       0
Have you found opportunities for practical experience or internships related to your course?          1
How satisfied are you with the facilities and resources available for your course (e.g., labs, libraries, equipment)     0
What specific aspects of the course have exceeded your expectations?                                  0
What aspects of the course have fallen short of your expectations?                                    0
 On a scale of 1 to 5, how satisfied are you overall with your current course?                        1
Would you recommend your course to other students?                                                    0
After the completion of the course will you consider to pursue a career in the same field?            0
What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don't add % sign)     0
dtype: int64
```

```
df = df.dropna()
df.isna().sum()
```

```
Name                                                                                                  0
Register Number                                                                                       0
Course                                                                                                0
Year                                                                                                  0
What were your main reasons for choosing your current course/degree?                                  0
What specific outcomes or benefits did you expect from pursuing this degree?                          0
How satisfied are you with the teaching quality and faculty support?                                  0
How satisfied are you with the curriculum and course structure?                                       0
Have you found opportunities for practical experience or internships related to your course?          0
How satisfied are you with the facilities and resources available for your course (e.g., labs, libraries, equipment)     0
What specific aspects of the course have exceeded your expectations?                                  0
What aspects of the course have fallen short of your expectations?                                    0
 On a scale of 1 to 5, how satisfied are you overall with your current course?                        0
Would you recommend your course to other students?                                                    0
After the completion of the course will you consider to pursue a career in the same field?            0
What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don't add % sign)     0
dtype: int64
```

HANDLING NON - RESPONDENTS

In [6]:
```
# Adjusted weights
total = 337
observed = len(df)
weight = total/observed
columns = [4,5,6,7,10,13]
for col in columns:
    df.iloc[:, col] = pd.to_numeric(df.iloc[:, col], errors='coerce')*weight
df.head()
```

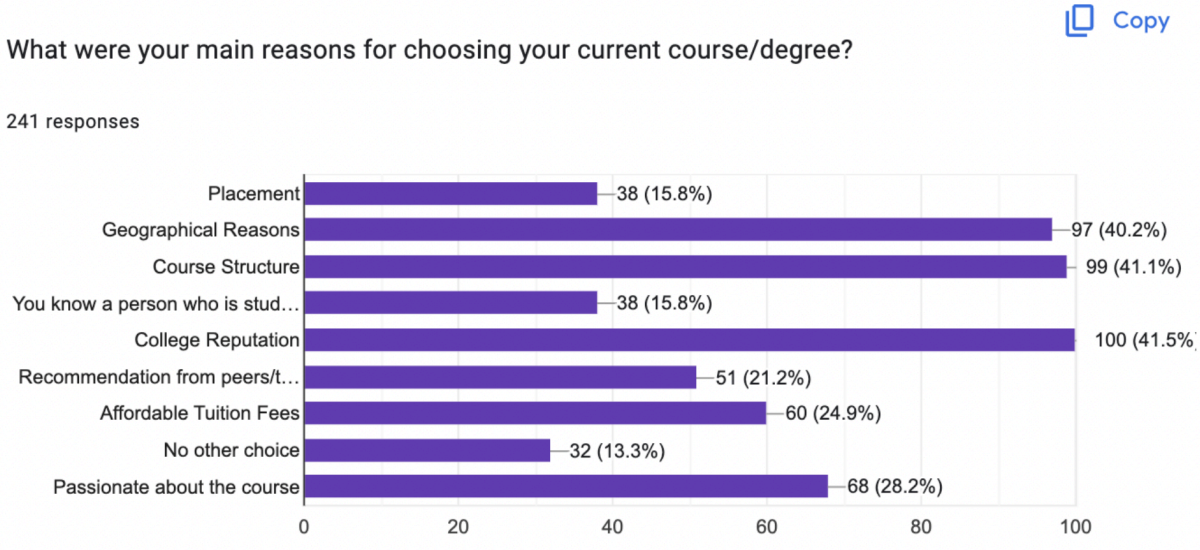
Out[6]:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13
0	BBA (Business Analytics)	1	College Reputation	Placement	4.160494	4.160494	4.160494	4.160494	Contribution to the Society	Academic Challenge	4.160494	No	Maybe	69.341564
1	BCom (Financial Analytics)	3	Placement	Placement, Personal Growth, Contribution to th...	4.160494	2.773663	4.160494	2.773663	Personal Growth, Academic Challenge	Placements, Good Networking Opportunities	4.160494	No	No	13.868313
2	BSc (Data Science)	2	Course Structure, Recommendation from peers/te...	Placement	4.160494	2.773663	2.773663	4.160494	Personal Growth	Placements, Academic Challenge, Good Networkin...	4.160494	Yes	No	13.868313
3	BSc (Data Science)	2	You know a person who is studying here	Placement	4.160494	4.160494	4.160494	4.160494	Good Faculty Support	Personal Growth	4.160494	Yes	Maybe	69.341564
4	BSc (Data Science)	2	No other choice	Personal Growth	5.547325	5.547325	5.547325	5.547325	Good Faculty Support	Placements	4.160494	No	No	0.000014

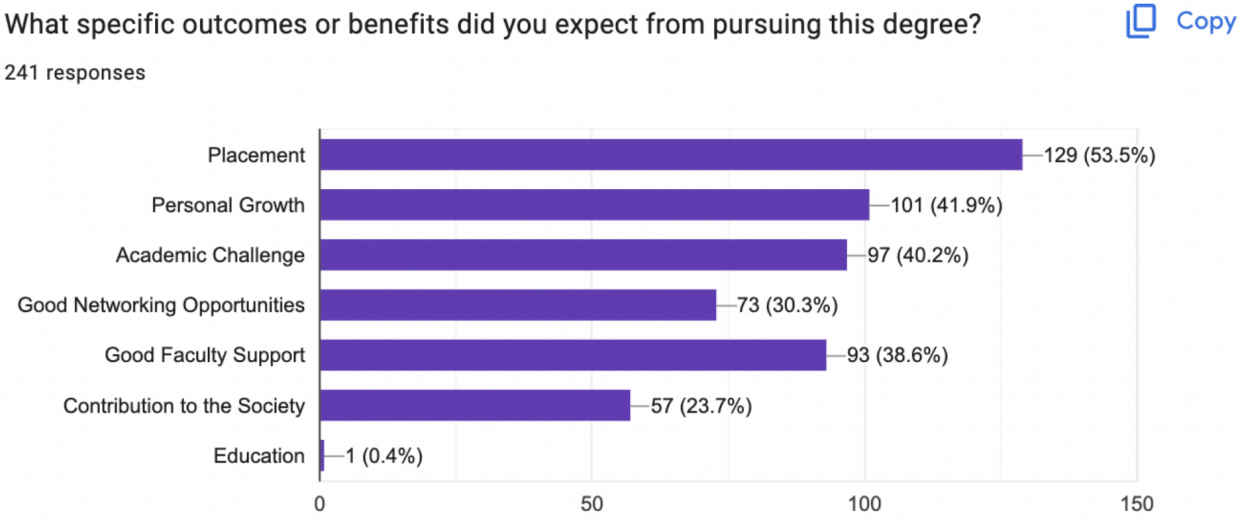
In this way we have given more importance to respondents over non - respondents.

ANALYSIS AND INSIGHTS

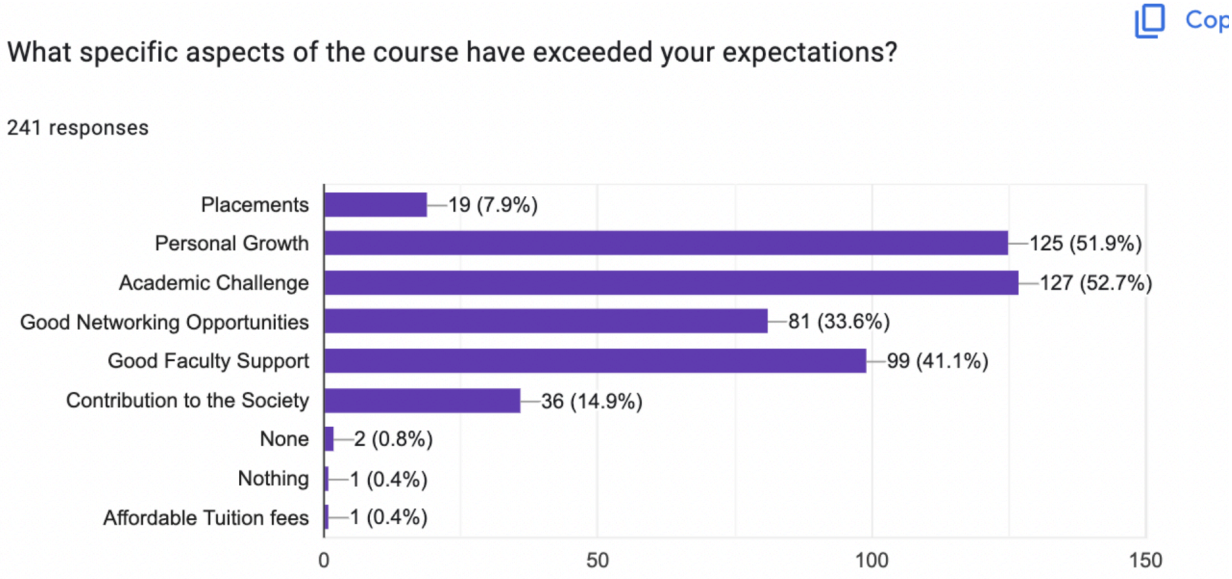
- This data tells that people before joining CHRIST (Deemed to be University) rely the most on college reputation before applying for any course closely followed by the course structure. These two are the major fields which the college should work on. Something unique to our college because of which people have chosen a course here is the geographical location of the campus.



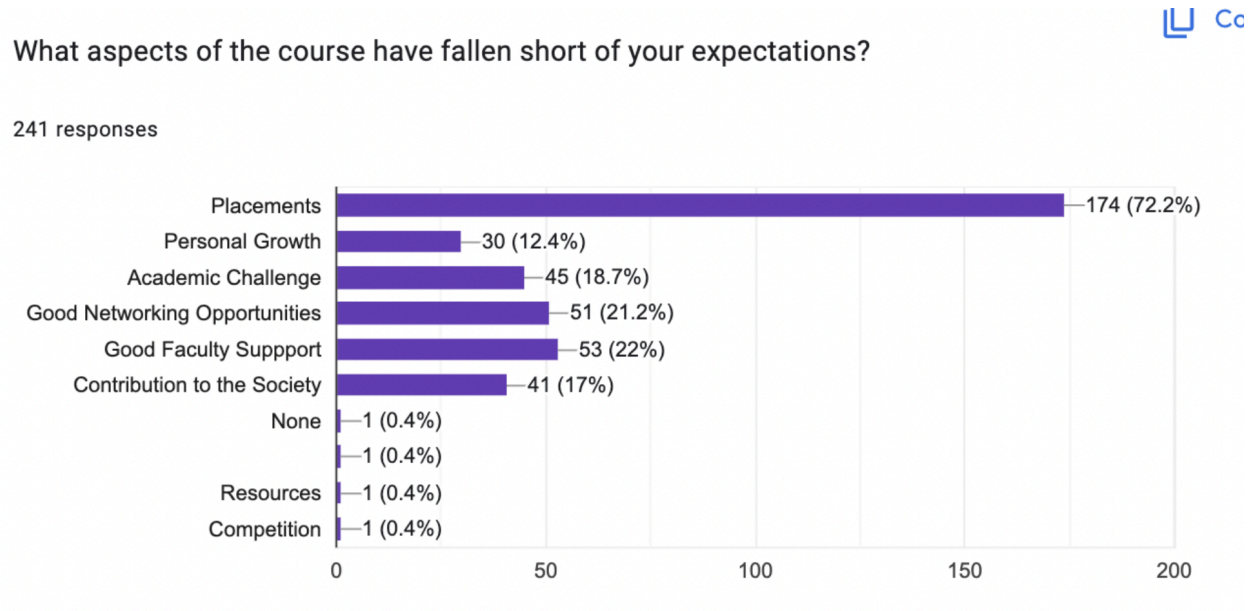
- The study tells that most people look for placements followed by personal growth before applying to college. The least sought attribute is the university's contribution towards society.



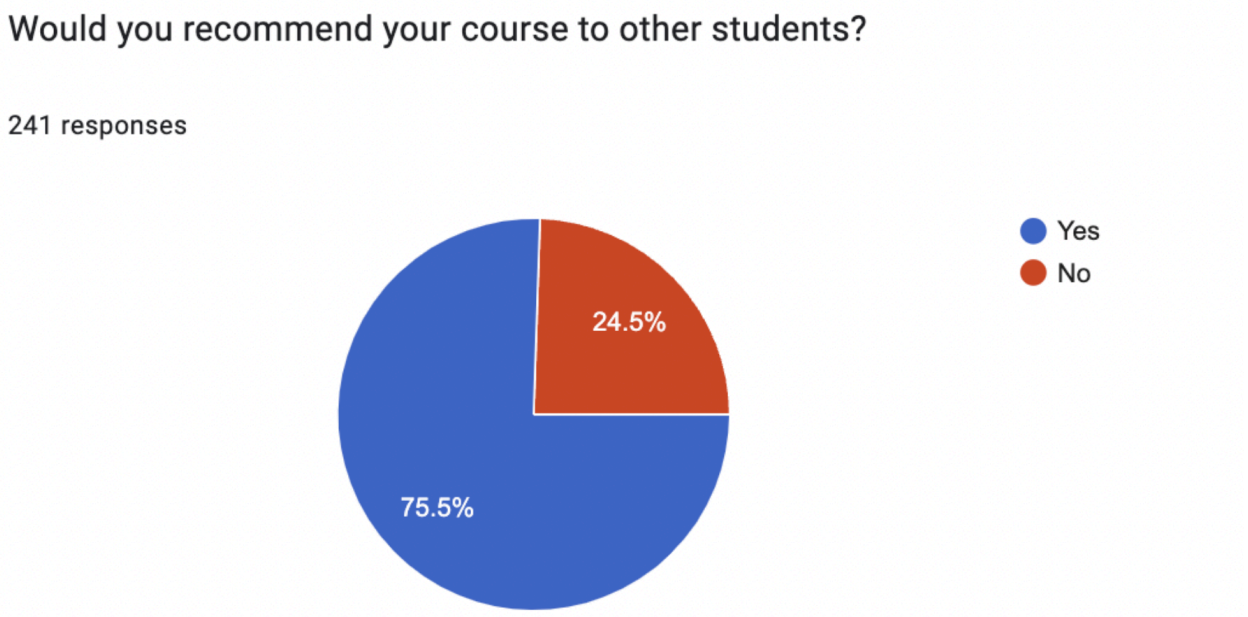
- The college has effectively impressed students with the personal growth opportunities, academic challenges and faculty support.



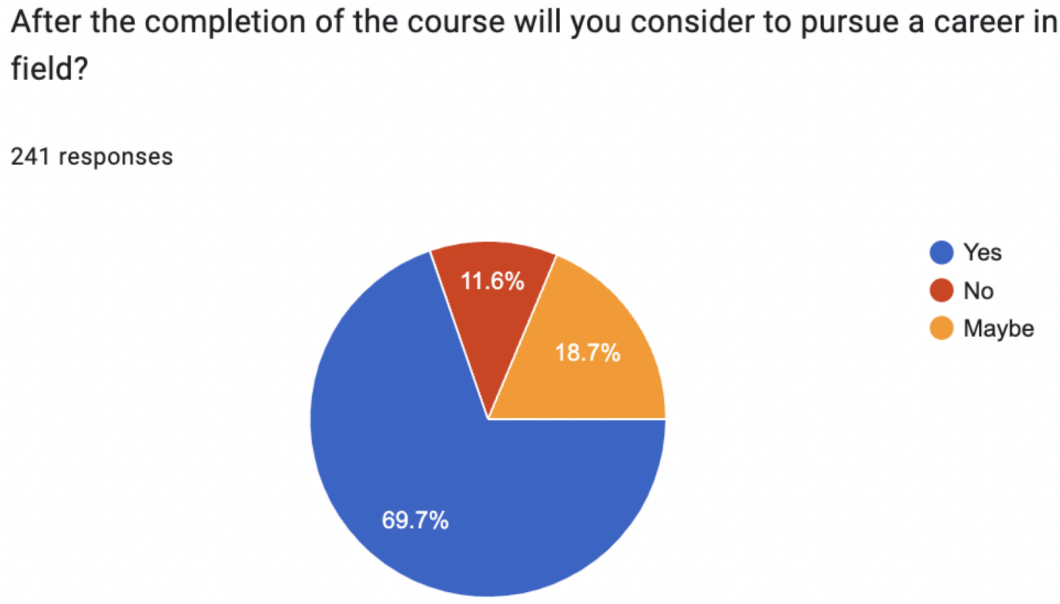
- The college has failed to impress the students with regards to placement. 72% people feel that their placement expectation is not met by college.



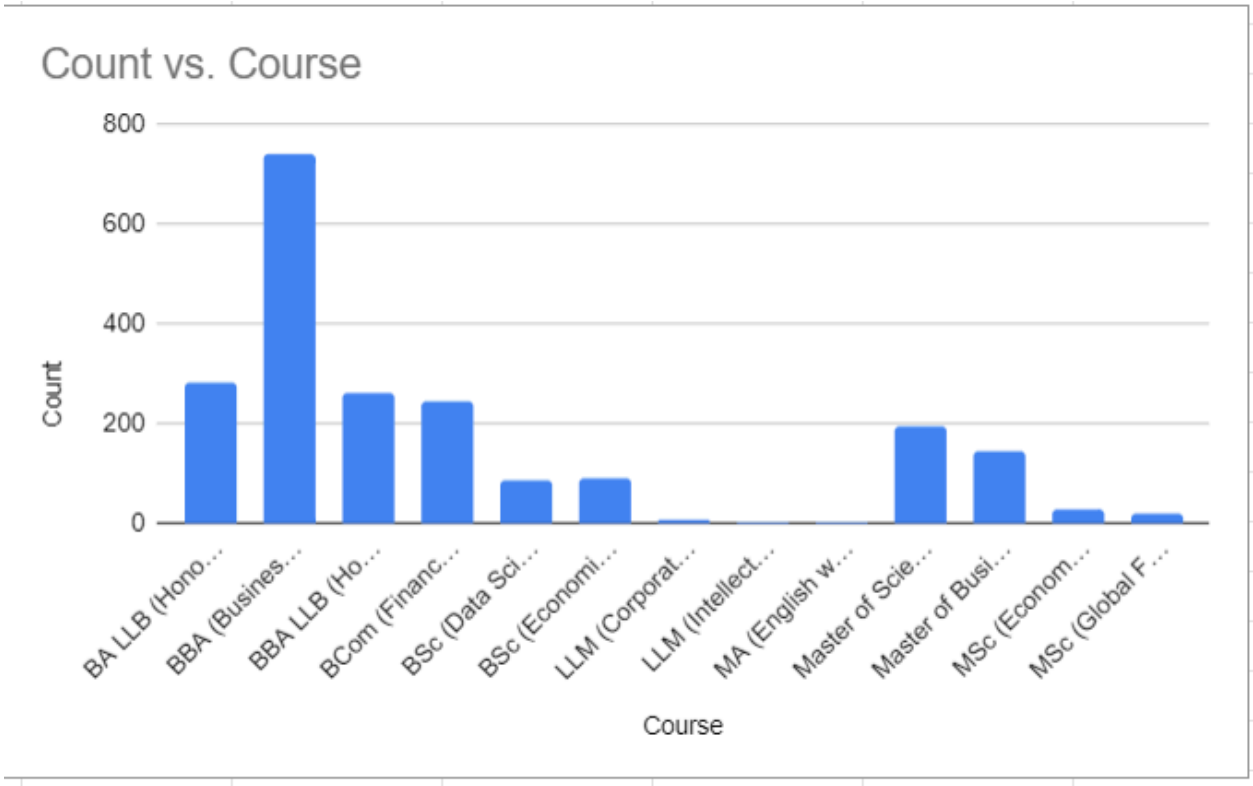
- 3 quarters of students said that they will recommend the college to others. Which shows an overall satisfaction of the students with college. This also shows that the name of the college will effectively spread by word of mouth.

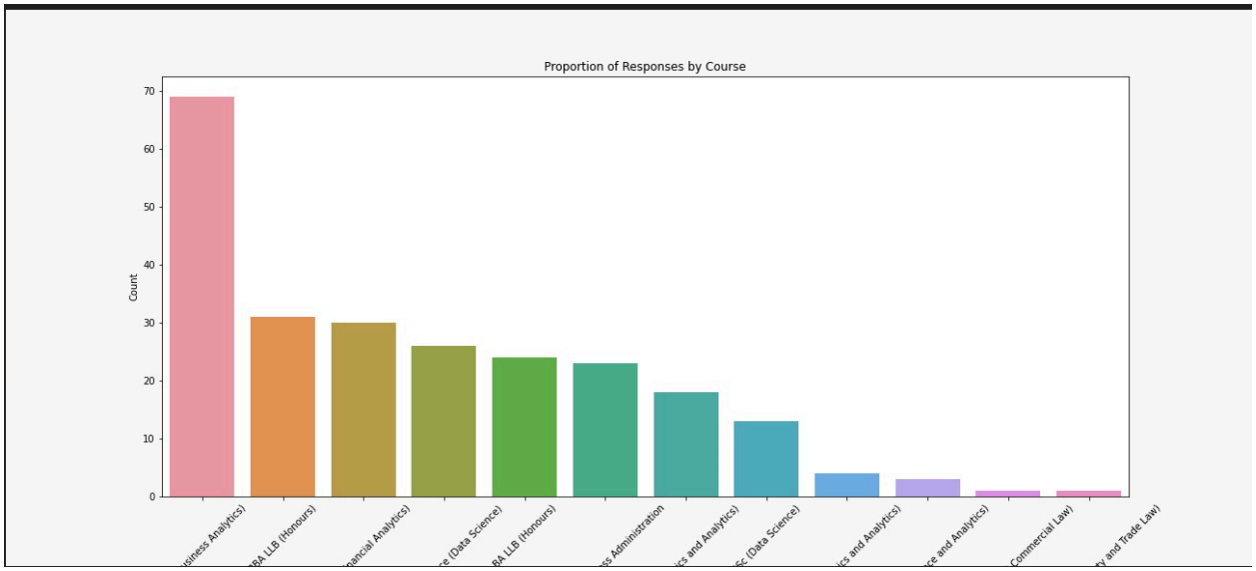


- Around 70% students are sure that they will pursue a degree in the same field which shows that their respective courses have made sure that interest is generated/ retained in respective fields.

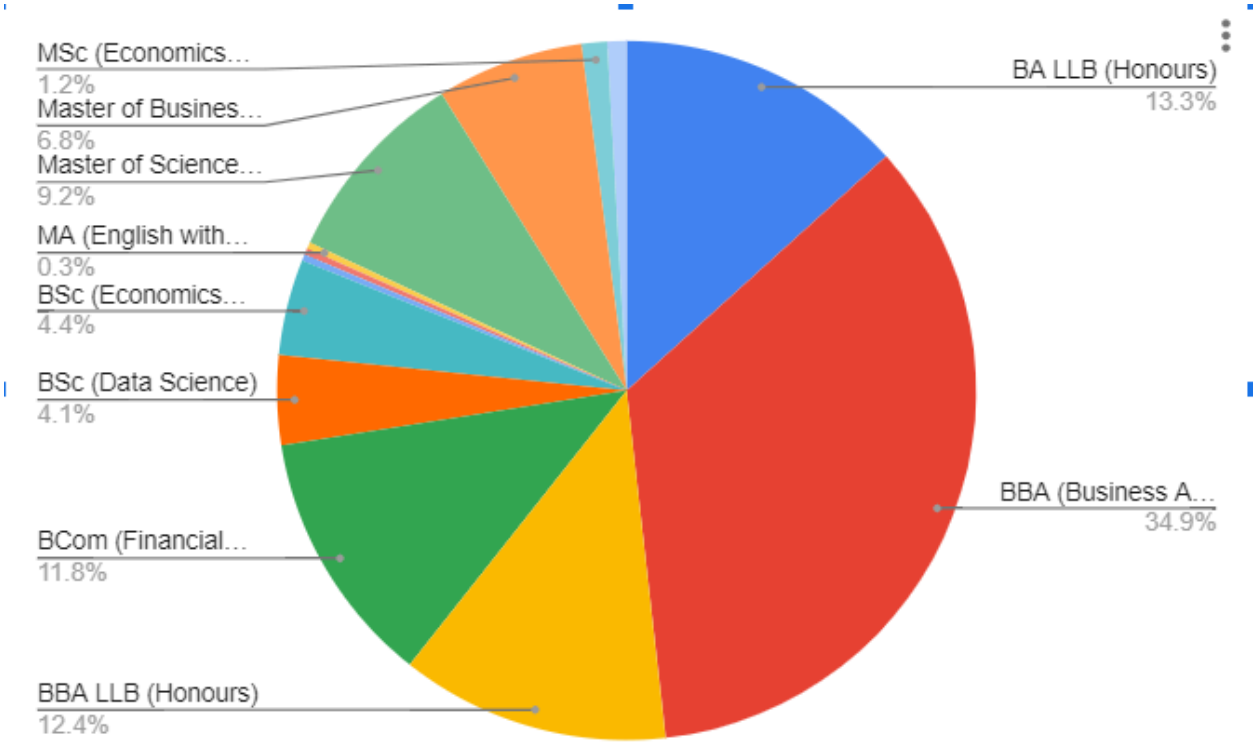


- We see that the proportion of students sampled has been maintained, i.e, the course having more students has more responses. This shows that the sampling was not biased to any particular course.

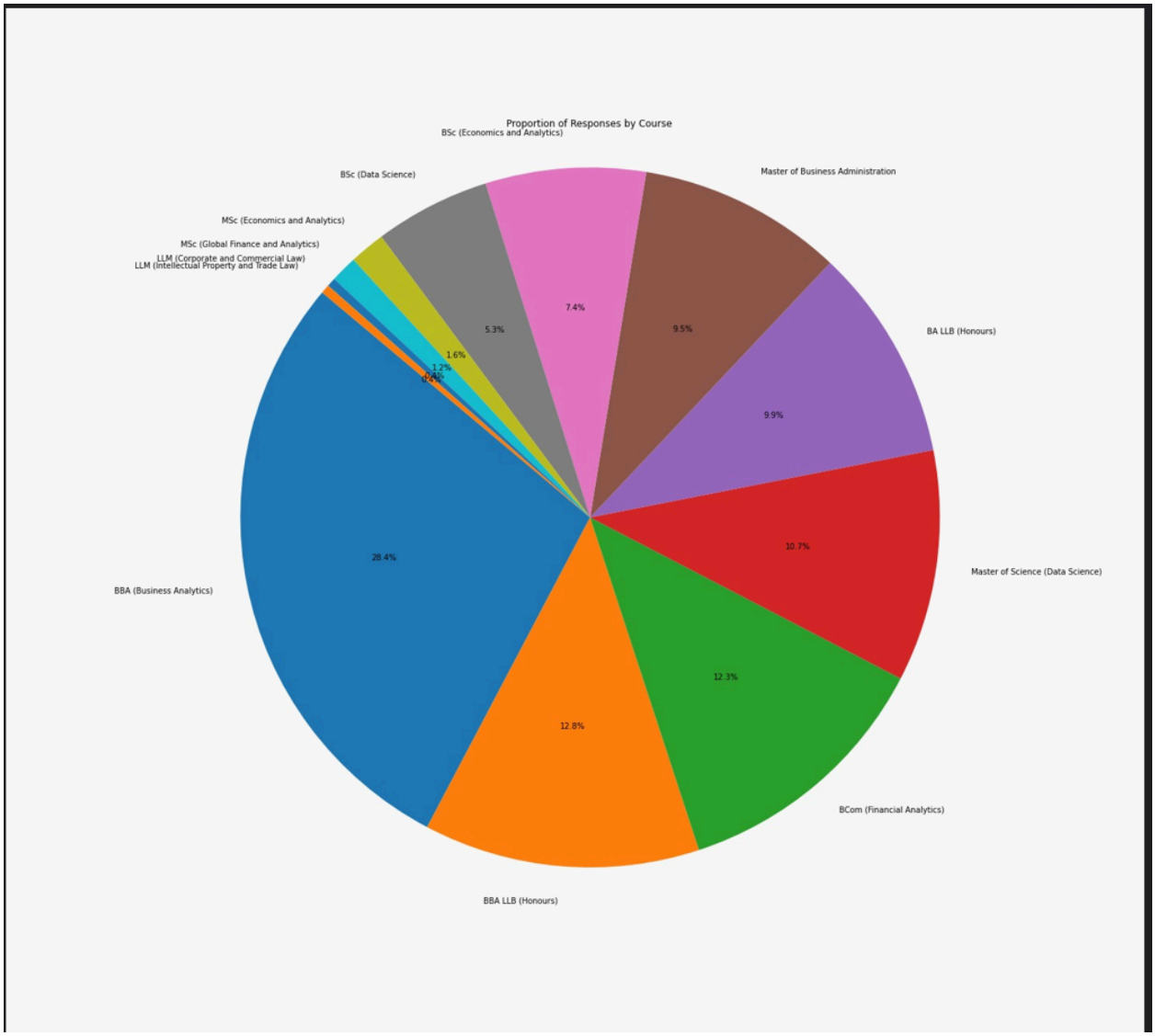




- **On population**

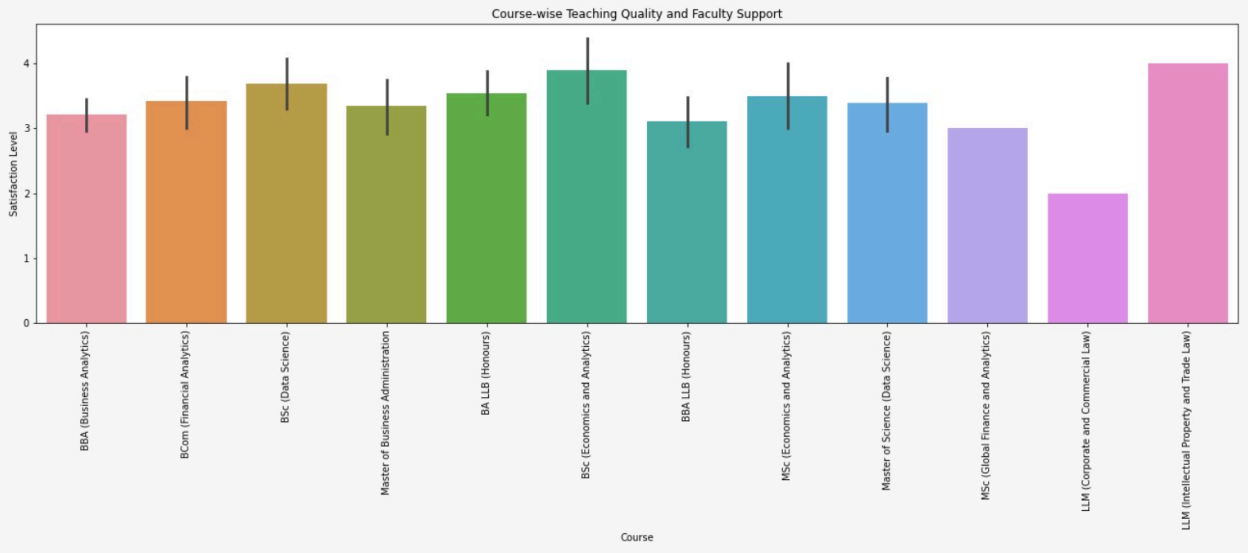


- **On Sample**

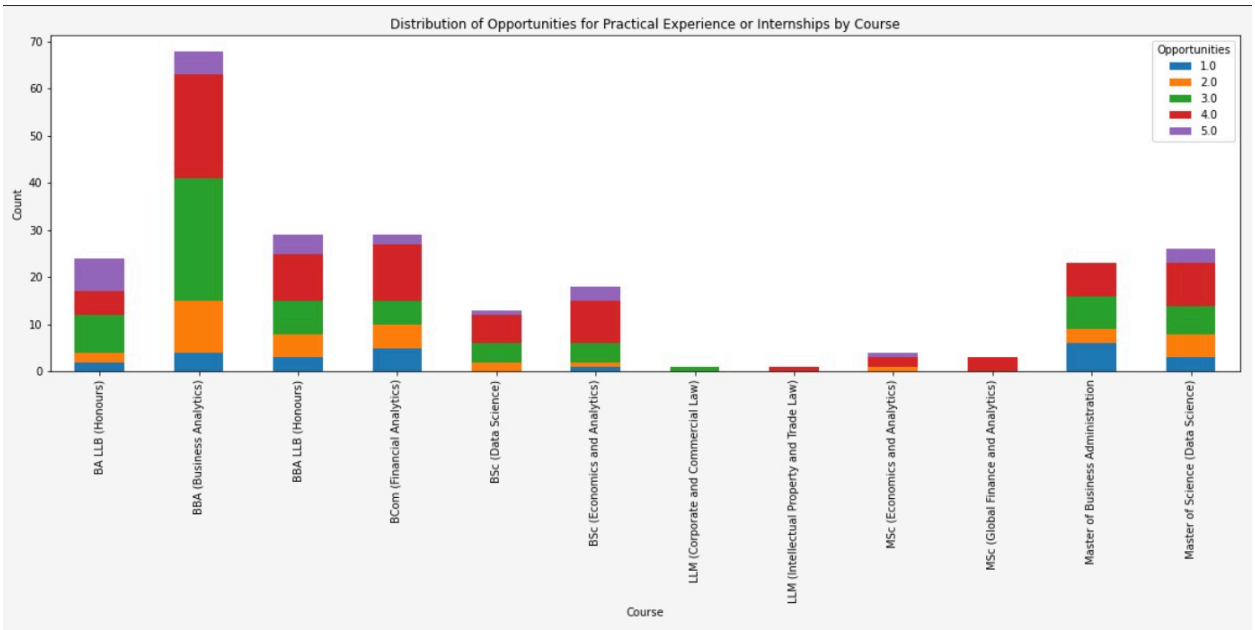


We can clearly see that the proportions are quite close to each other.

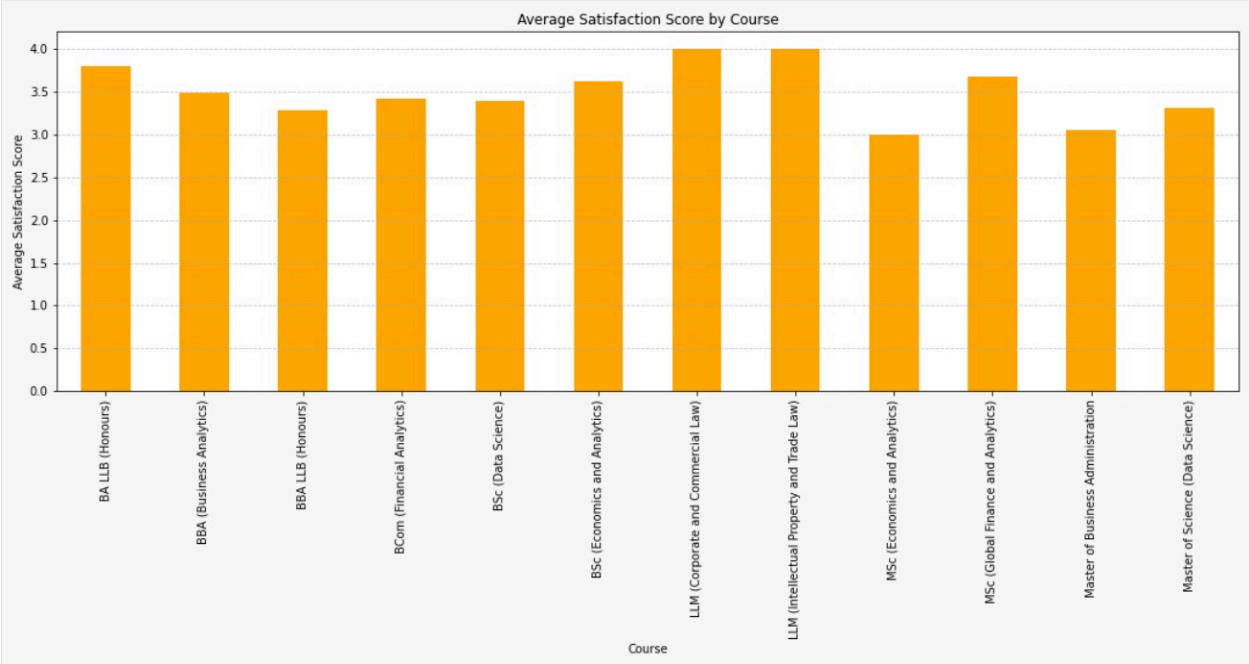
- BSc Economics and Analytics are the most happy with the teaching facilities. LLM Corporate and Commercial Law are the least satisfied. This is something which each department should look into.



- The department/ course which is providing the most practical experience is BBA and the least is by LLM, MSc Global Finance and Analytics and MBA.



- The highest overall average satisfaction is in LLM students and the least is by MSc Economics and Analytics students. Individual courses average satisfaction is also seen.



CODES FOR THE PLOTS

The codes for the plots have been given below. Read the commented part to understand the code

```
import matplotlib.pyplot as plt

# Count of responses for each course
course_counts = df['Course'].value_counts()

# Plotting a pie chart
plt.figure(figsize=(20, 18))
plt.pie(course_counts, labels=course_counts.index, autopct='%1.1f%%', startangle=140)
plt.title('Proportion of Responses by Course')
plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.

# Saving the plot as an image
plt.savefig('proportion_of_responses_pie_chart.png')

plt.show()
```

```
import seaborn as sns

# Count of responses for each course
course_counts = df['Course'].value_counts()

# Plotting a bar plot
plt.figure(figsize=(18, 8))
sns.barplot(x=course_counts.index, y=course_counts.values)
plt.title('Proportion of Responses by Course')
plt.xlabel('Course')
plt.ylabel('Count')
plt.xticks(rotation=45)

# Saving the plot as an image
plt.savefig('proportion_of_responses_bar_plot.png')

plt.show()
```

```
import seaborn as sns
import matplotlib.pyplot as plt

# Count of responses for each year
year_counts = df['Year'].value_counts()

# Plotting a bar plot
plt.figure(figsize=(18, 8))
sns.barplot(x=year_counts.index, y=year_counts.values)
plt.title('Proportion of Responses by Year')
plt.xlabel('Year')
plt.ylabel('Count')

# Saving the plot as an image
plt.savefig('proportion_of_responses_by_year.png')

plt.show()
```

```python
import matplotlib.pyplot as plt

# Count of responses for each year
year_counts = df['Year'].value_counts()

# Plotting a pie chart
plt.figure(figsize=(8, 8))
plt.pie(year_counts, labels=year_counts.index, autopct='%1.1f%%', startangle=140)
plt.title('Proportion of Responses by Year')

# Saving the plot as an image
plt.savefig('proportion_of_responses_by_year_pie_chart.png')

plt.show()
```

```python
import seaborn as sns
import matplotlib.pyplot as plt

# Convert 'Would you recommend your course to other students?' column to numeric values
df['Would you recommend your course to other students? '] = df['Would you recommend your course to other students? '].map({'Yes': 1, 'No': 0})

# Grouping the DataFrame by 'Course' and aggregating the mean recommendation
course_recommendation_mean = df.groupby('Course')['Would you recommend your course to other students? '].mean().reset_index()

# Plotting a bar plot
plt.figure(figsize=(15, 8))
sns.barplot(data=course_recommendation_mean, x='Course', y='Would you recommend your course to other students? ')
plt.title('Proportion of Students Recommending Their Course by Course')
plt.xlabel('Course')
plt.ylabel('Proportion of Recommendations')
plt.xticks(rotation=45)
plt.tight_layout()
plt.savefig('Would you recommend your course to other students?.png')
# Showing the plot
plt.show()
```

```python
import seaborn as sns
import matplotlib.pyplot as plt

# Plotting the bar plot
plt.figure(figsize=(18, 8))
sns.barplot(data=df, x='Course', y='How satisfied are you with the teaching quality and faculty support?')
plt.title('Course-wise Teaching Quality and Faculty Support')
plt.xlabel('Course')
plt.ylabel('Satisfaction Level')
plt.xticks(rotation=90)
plt.tight_layout()

plt.savefig("Course-wise Teaching Quality and Faculty Support.png")
# Showing the plot
plt.show()
```

```python
import seaborn as sns
import matplotlib.pyplot as plt

# Plotting the bar plot
plt.figure(figsize=(18, 8))
sns.barplot(data=df, x='Course', y='How satisfied are you with the curriculum and course structure?')
plt.title('Course-wise Satisfaction with Curriculum and Course Structure')
plt.xlabel('Course')
plt.ylabel('Satisfaction Level')
plt.xticks(rotation=90)
plt.tight_layout()
plt.savefig("Course-wise Satisfaction with Curriculum and Course Structure")

# Showing the plot
plt.show()
```

```
import matplotlib.pyplot as plt

# Grouping the DataFrame by 'Course' and counting the opportunities for practical experience or internships
opportunities_count = df.groupby('Course')['Have you found opportunities for practical experience or internships related to your course?'].val

# Determine the layout of subplots dynamically
num_courses = len(opportunities_count.index)
num_cols = 3
num_rows = -(-num_courses // num_cols)  # Ceiling division to ensure enough rows

# Plotting the pie chart for each course
fig, axes = plt.subplots(nrows=num_rows, ncols=num_cols, figsize=(15, 5*num_rows))

for i, (course, row) in enumerate(opportunities_count.iterrows()):
    ax = axes[i // num_cols, i % num_cols]
    row.plot(kind='pie', ax=ax, autopct='%1.1f%%', startangle=90, colors=['lightblue', 'lightgreen'])
    ax.set_title(course)
    ax.set_ylabel('')
    ax.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle

# Removing empty subplots
for i in range(num_courses, num_rows*num_cols):
    fig.delaxes(axes.flatten()[i])

plt.tight_layout()

# Saving the plot
plt.savefig("inter.png")

# Showing the plot
plt.show()
```

```
import matplotlib.pyplot as plt

# Grouping the DataFrame by 'Course' and counting the opportunities for practical experience or internships
opportunities_count = df.groupby('Course')['Have you found opportunities for practical experience or internships related to your course?'].val

# Plotting the bar plot for each course
opportunities_count.plot(kind='bar', stacked=True, figsize=(16, 8))
plt.title('Distribution of Opportunities for Practical Experience or Internships by Course')
plt.xlabel('Course')
plt.ylabel('Count')
plt.xticks(rotation=90)
plt.legend(title='Opportunities', loc='upper right')
plt.tight_layout()

# Saving the plot
plt.savefig("opportunities_bar.png")

# Showing the plot
plt.show()
```

```
import matplotlib.pyplot as plt

# Grouping the DataFrame by 'Course' and counting the satisfaction with facilities and resources
facilities_count = df.groupby('Course')['How satisfied are you with the facilities and resources available for your course (e.g., labs, librar

# Determine the layout of subplots dynamically
num_courses = len(facilities_count.index)
num_cols = 3
num_rows = -(-num_courses // num_cols)  # Ceiling division to ensure enough rows

# Plotting the pie chart for each course
fig, axes = plt.subplots(nrows=num_rows, ncols=num_cols, figsize=(15, 5*num_rows))

for i, (course, row) in enumerate(facilities_count.iterrows()):
    ax = axes[i // num_cols, i % num_cols]
    row.plot(kind='pie', ax=ax, autopct='%1.1f%%', startangle=90)
    ax.set_title(course)
    ax.set_ylabel('')
    ax.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle

# Removing empty subplots
for i in range(num_courses, num_rows*num_cols):
    fig.delaxes(axes.flatten()[i])

plt.tight_layout()

# Saving the plot
plt.savefig("facilities_pie.png")

# Showing the plot
plt.show()
```

```
import matplotlib.pyplot as plt

# Grouping the DataFrame by 'Course' and calculating the average satisfaction score
satisfaction_mean = df.groupby('Course')[' On a scale of 1 to 5, how satisfied are you overall with your current course?'].mean()

# Plotting the bar chart
plt.figure(figsize=(15, 8))
satisfaction_mean.plot(kind='bar', color='orange')
plt.title('Average Satisfaction Score by Course')
plt.xlabel('Course')
plt.ylabel('Average Satisfaction Score')
plt.xticks(rotation=90)
plt.grid(axis='y', linestyle='--', alpha=0.7)
plt.tight_layout()

# Saving the plot
plt.savefig("course_satisfaction_bar.png")

# Showing the plot
plt.show()
```

```
import matplotlib.pyplot as plt

# Grouping the DataFrame by 'Course' and calculating the average satisfaction score
satisfaction_mean = df.groupby('Course')[' On a scale of 1 to 5, how satisfied are you overall with your current course?'].mean()

# Iterate over each course
for course, score in satisfaction_mean.items():
    # Plotting the bar chart for each course
    plt.figure(figsize=(6, 4))
    plt.bar(course, score, color='skyblue')
    plt.title(f'Average Satisfaction for {course}')
    plt.xlabel('Course')
    plt.ylabel('Average Satisfaction Score')
    plt.ylim(0, 5)  # Limit y-axis from 0 to 5
    plt.xticks(rotation=45)
    plt.grid(axis='y', linestyle='--', alpha=0.7)
    plt.tight_layout()

    # Saving the plot
    plt.savefig(f"{course}_average_satisfaction.png")

    # Showing the plot
    plt.show()
```

```
import seaborn as sns
import matplotlib.pyplot as plt

# Plotting the count plot
plt.figure(figsize=(16, 8))
sns.countplot(data=df, x='What percent chances are there that upon completion of the course you will pursue a career in the same field? (Don\'
plt.title('Distribution of Responses')
plt.xlabel('Response')
plt.ylabel('Count')
plt.xticks(rotation=75)
plt.tight_layout()

# Saving the plot
plt.savefig("response_count_plot.png")

# Showing the plot
plt.show()
```

Results and Discussions:

As per our survey, there are a few **general insights** that were made clear:

1. ***College Reputation, Geographical Reason***s and ***Course Structure*** were the most chosen factors by the students for joining the course at the college followed by their passion towards the subject and affordability.
2. ***Placement***, ***Academic Growth*** and ***Academic Challenges*** were the expectations from the the courses at the university.
3. **44%** of the total enrolled students were ***happy***, and **9.1%** were ***very satisfied*** with their **course structure** and the **curriculum**.
4. The college fulfilled ***Personal Growth*** and ***Academic Challenge*** for **more** than **50%** of the students.
5. **72.2%** of the students **blamed *Placements*** as the reason for falling short of their expectations.
6. **75.5%** of students would ***recommend*** their course to others.
7. **69.7%** of students would ***like to pursue*** a **career** in the field they have chosen, **18.7%** were ***confused***, and **11.6%** of students ***won't be pursuing*** their careers in the enrolled fields.

This simple survey gave a reason to a question which is why there are lesser admissions. It is because of placements and college and work on this. This teaches the importance of surveys in real world.

PROBLEMS FACED

CHALLENGES

1. The most problems were faced in data collection. Getting the contact details of each student was tough. Moreover, after sending them the form, getting them to fill the form was really difficult.
2. Handling the non - respondents.
3. There were time and money constraints in doing the sampling survey.
4. We were not sure if the sample is a true representative of the population or not.

CONCLUSION

In conclusion, our study delved into the intricate relationship between student expectations and satisfaction in college courses at CHRIST (Deemed to be University), Lavasa. By surveying a diverse student population, we identified key factors influencing course selection and assessed post-enrollment satisfaction levels. Our findings underscore the importance of aligning curriculum with student needs, particularly in areas of teaching quality, course structure, and placement opportunities. Despite challenges in data collection, our study provides valuable insights for enhancing student engagement and refining educational offerings. Moving forward, addressing identified shortcomings can foster a more fulfilling academic experience and bolster student success.

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