Goal Question Metrics(GQM)

Software Metrics (SE-611)

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1. Introduction

The **GQM** method stands for **Goal, Question, Metric**, and it is a process used to improve and measure software quality by focusing on specific objectives.

This method is broken down into three steps:

1. **Goal (Conceptual Level):** The first step is to define a clear goal, which outlines what we want to accomplish. This goal is based on different perspectives and quality models, considering the context in which we are working.
2. **Question (Operational Level)**: After defining the goal, we create questions that help us explore the subject in more detail and assess whether we are on track to achieve the goal.
3. **Metric (Quantitative Level):** For each question, we set measurable metrics that allow us to collect data and track progress. These metrics help us evaluate the results and determine whether the goal has been achieved.

To apply GQM, we begin by setting the goal, then form questions to gather data from relevant participants. Each question is tied to specific metrics to measure the results. Finally, we analyze the data using these metrics to see if the goal has been met**.**

2. Project Specification

2.1 Project Overview: Our objective is to evaluate if the internship process in IIT is effective from the perspective of IIT students.

2.2 Motivation: Every year, the students of the 7th semester are sent to companies to have industrial experience. Since the beginning, IIT initially allocates companies to students. Students show their competence to be an intern in the company by giving interviews in most cases. But the majority of students raise questions on how IIT initially allocates companies to students? According to some students, the internship process needs to be refined, more clear and fair. So, we have decided to work on the task to evaluate the effectiveness of the IIT internship procedure.

2.3 Scope: we want to evaluate the effectiveness of the IIT internship procedure based on the experience gained regarding the IIT internship process. That's why we defined our scope to those who have already done the internship following the IIT internship process.

3. Goal Specification

3.1 GQM Framework

General Statement: Evaluating the effectiveness of the IIT internship process.

3.2 PPE Approach

Purpose: To evaluate the internship process to understand its effectiveness.

Perspective: To examine the effectiveness of the IIT internship process from the viewpoint of IIT students.

Environment: We want to evaluate the internship process of the IIT. So within the context of the IIT internship, we want to evaluate the process's effectiveness.

After specifying our goal through the **purpose-perspective-environment** approach, our final goal is :
"*To evaluate the internship process to understand its effectiveness from the viewpoint of IIT students within the context of the IIT internship process*."

3.3 Sub Goals:

Our goal has 3 more sub goals:

A. **Subgoal1: Understand the expectations of students before starting the internship:** we can achieve this goal by asking questions like - which company did the students expect? What is the max distance the students expected between their residential and company? Did they think a standard intern salary system should be implemented from IIT? Did they want that company to provide a remote internship facility? Did they think students should have been given the chance to apply individually and get to select their expected company?

B. **Subgoal2: Understand the challenges faced by IIT students regarding internship:** we can achieve this goal by asking questions like - was their IPO committee student friendly? Were students provided with proper instructions on : mid presentation, final presentation, Resume preparation, do students face any inconsistency between IIT and company's statement? Did every student start their internship from the starting date according to the academic calendar? Company environment friendly and professional?

C. **Subgoal3**: **Evaluate IIT students' satisfaction regarding the IIT internship process.** We can achieve this goal by asking questions like - Did the students get their expected company? Were they satisfied with the distance between their residence and company? Did they get the standard salary set by IIT? Did they get the remote intern opportunity in their allocated company?

3.4 Question and metric:

- **Subgoal1**: **Understand the expectations of students before starting the internship.**
  - **Question1:** Which company did you expect?
    - **Metric1:** percentage of students expect each of the companies.
  - **Question2:** Which max distance did you expect between your residential and company?
    - **Metric1:** the distance between residence and company respondents expected.
  - **Question3:** Did you think a standard intern salary system should be implemented from IIT?
    - **Metric1:** percentage of students agree on the standard salary implementation by IIT.
  - **Question4:** Did you want that company to provide a remote internship facility?
    - **Metric1:** percentage of students wanted remote internship facility
  - **Questions5:** Did you think students should have been given the chance to apply individually and get to select their expected company?
    - **Metric1:** percentage of students agree on that students should have been given the opportunity to select their expected company

- **Subgoal2: Understand the challenges faced by IIT students regarding internship.**
  - **Question1:** Was your IPO committee student friendly?
    - **Metric1:** percentage of students who think IPO committee was friendly toward them
  - **Question2**: Are students provided with proper instructions on- mid presentation, final presentation, resume preparation?
    - **Metric1:** percentage of students who were provided with proper instructions on mid presentation
    - **Metric2:** percentage of students who were provided with proper instructions on final presentation
    - **Metric3:** percentage of students who were provided with proper instructions on resume preparation.

    - **Questions3:** Do students face any inconsistency between IIT and company's statement?
        - **Metric1:** percentage of students who faced inconsistency between IIT and company
    - **Questions4**: Does every student start their internship from the starting date according to the academic calendar?
        - **Metric1:** percentage of students who started their internship according to academic calender date
    - **Questions5**: Company environment friendly and professional?
        - **Metric1:** percentage of students who got friendly and professional environment

- **Subgoal3**: **Evaluate IIT students' satisfaction regarding the IIT internship process.**
    - **Question1:** Have you got your expected company?
        - **Metric1:** percentage of students who got their expected company.
    - **Question2:** are you satisfied with the distance between your residence and company?
        - **Metric1:** percentage of students who were satisfied with the distance between their residence and company
    - **Question3:** Did you get the standard salary set by IIT?
        - **Metric1:** percentage of students who got the minimum standard salary set by IIT.
    - **Question4:** Did you get the remote intern opportunity in your allocated company?
        - **Metric1:** percentage of students who got remote internship opportunities.

4. Questionnaire Preparation and Data Collection

To analyze the effectiveness of the IIT internship process, we prepared a survey questionnaire to gather insights from IIT students.

Our primary objective was to explore students' experiences and perceptions regarding the internship, assessing its strengths, limitations, and overall impact within the IIT context.

The survey questionnaires encompass a broad range of topics that are related to the experience of IIT students during their internship.

In below we mentioned the main factors that we explored at the time of our survey:

Understanding Student Expectations Before Starting the Internship:

We started our survey asking the expectations of IIT students before beginning their internships. That time we explored several key factors:

- **Company Preferences:** We asked students which company they expected to be placed in, considering options like Cefalo, BS23, SRBD, Streamstech, KAZ, Selise, Leads, Genuity, and others.
- **Commute Expectations:** We investigated a crucial factor specially for female student's anticipated maximum commuting distance between their residence and the company, categorizing responses into ranges of less than 4 km, 8 km, or 12 km.
- **Standard Intern Salary System:** We also conducted a comprehensive survey on the standard intern salary system.
- **Remote Internship Opportunities:** We explored their preferences regarding remote internship facilities using a Likert scale.
- **Self-Selection of Internship Placements:** We tried to find out whether students felt they should have the option to apply individually and select their preferred company and used a Likert scale for measuring it.

Challenges Faced by IIT Students During the Internship:

After understanding their expectations before internship, we identify the challenges that the students encountered throughout their internships, we addressed several aspects:

- **IPO Committee Support:** The Internship Placement Office (IPO) committee was student-friendly or not to understand the problems and situations faced by a student– so we asked about the support of IPO Committee members.
- **Guidance and Instructions:** We assessed whether students received proper instructions regarding mid-presentation, final presentation, and resume preparation through a checklist.
- **Inconsistencies Between IIT and Company Statements:** We investigated whether students experienced any discrepancies between IIT's and the company's expectations (Yes/No).
- **Internship Start Date Adherence:** A few students have to face delay in starting an internship. In that process we inquired whether all students commenced their internships on the designated start date according to the academic calendar (Yes/No).

- **Work Environment:** The overall experience of the work environment in terms of professionalism and friendliness was rated by the students using a numerical star rating system.

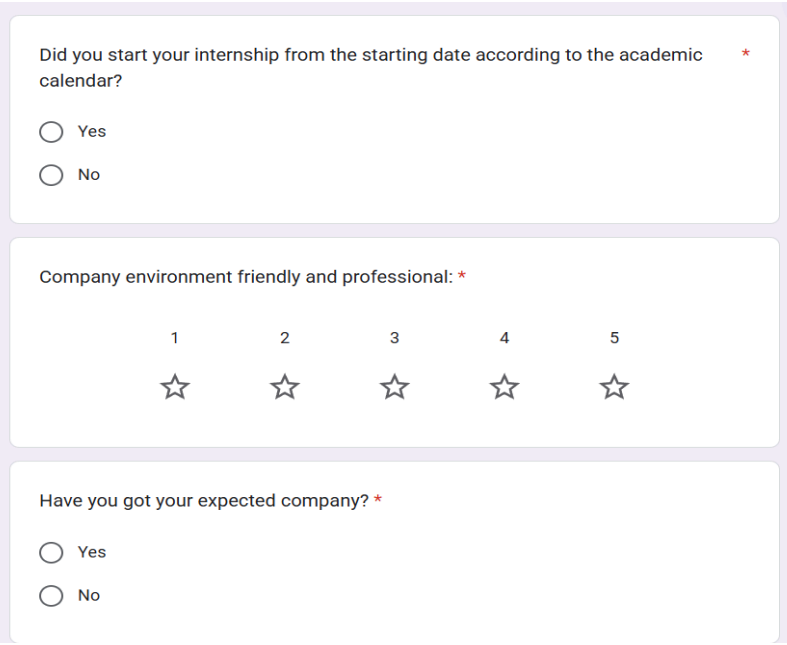
Evaluating Student Satisfaction with the IIT Internship Process:

To gauge overall satisfaction, we analyzed:

- **Placement Satisfaction:** Whether they(students) were placed in their expected company or not.
- **Commute Satisfaction:** Students were satisfied with the distance between their residence and their assigned company (Likert scale).
- **Salary Expectations:** Whether students received the standard salary set by IIT (Yes/No).
- **Remote Internship Availability:** Whether students were given the opportunity to work remotely in their assigned company (Yes/No).

Eventually we sought to offer a thorough analysis of the IIT internship process, examining its effectiveness, challenges, and potential improvements to better support students' career growth in the future.

A few sample questions:



5. Data Visualization

In this section, the summary of the collected data is represented:

Q1:

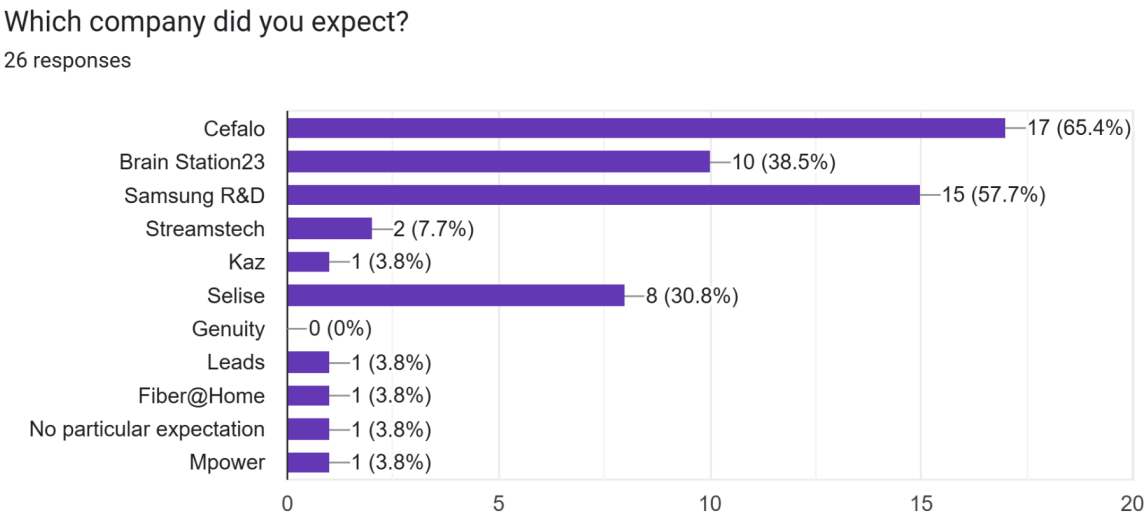


Figure-01: Respondents' expected companies

Q2:

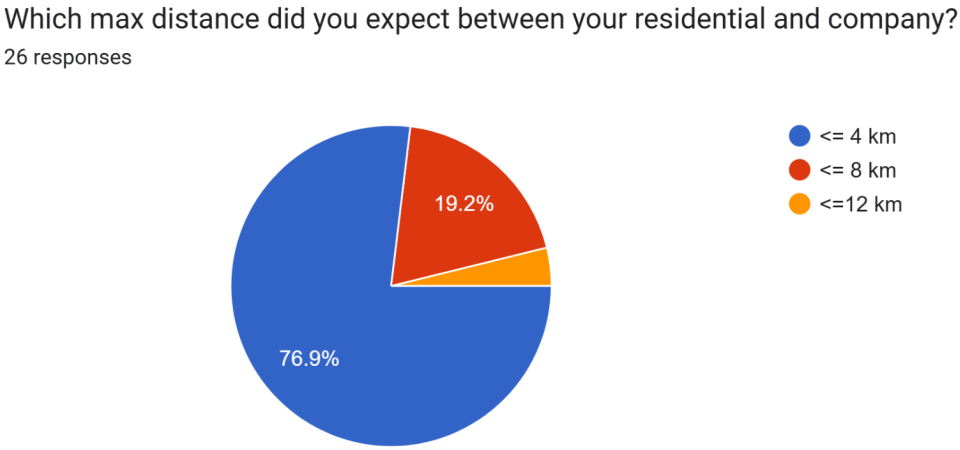


Figure-02: Respondents' expectation of max distance between their residence and company

Q3:

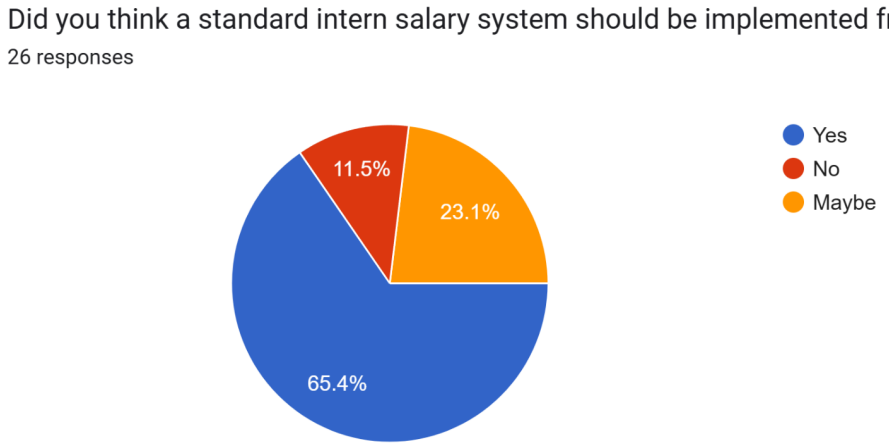


Figure-03: Respondents' thoughts on the standard salary system for interns

Q4:

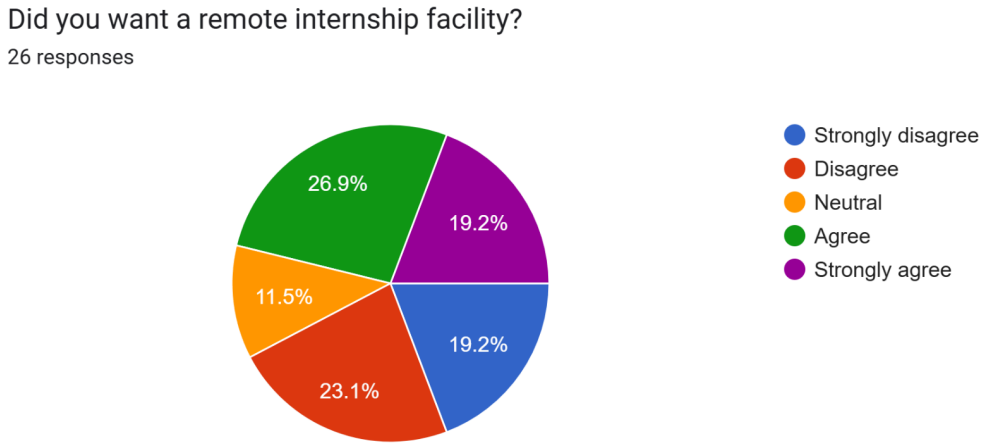


Figure-04: Respondents' desire for remote internship facility

Q5:

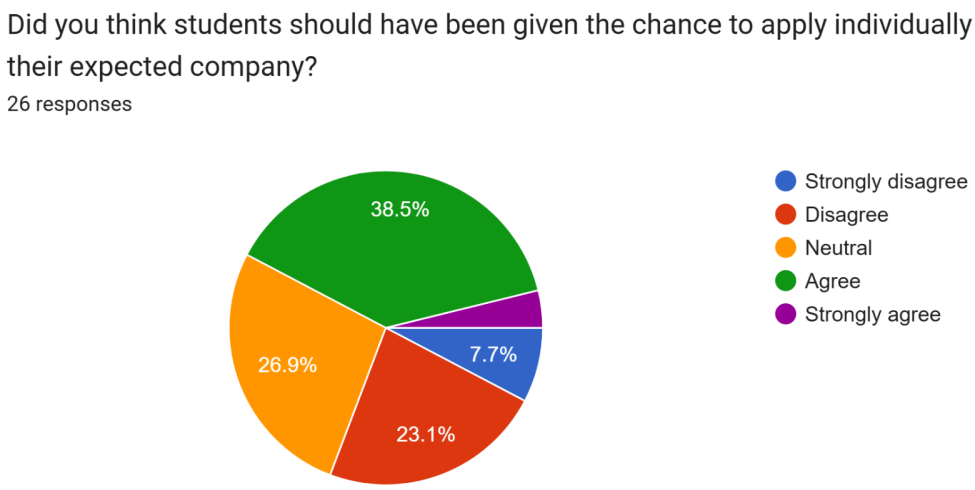


Figure-05: Respondents' thoughts on the opportunity of self-managed internship

Q6:

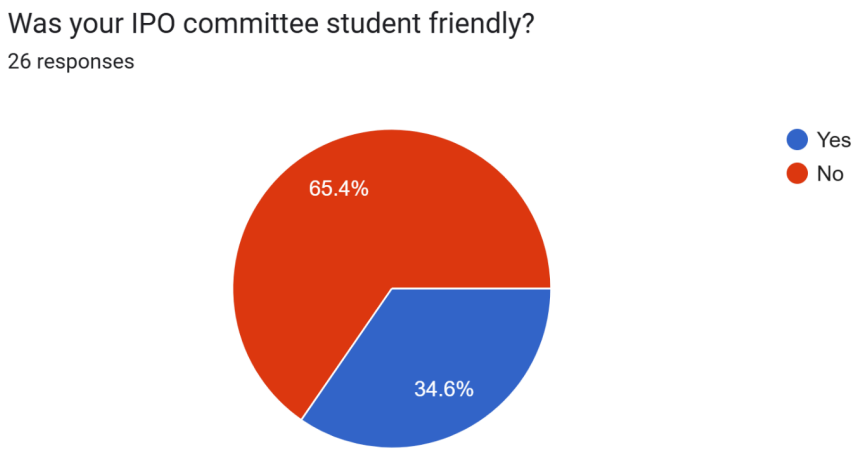


Figure-06: Respondents' comments on IPO's being student friendliness

Q7:

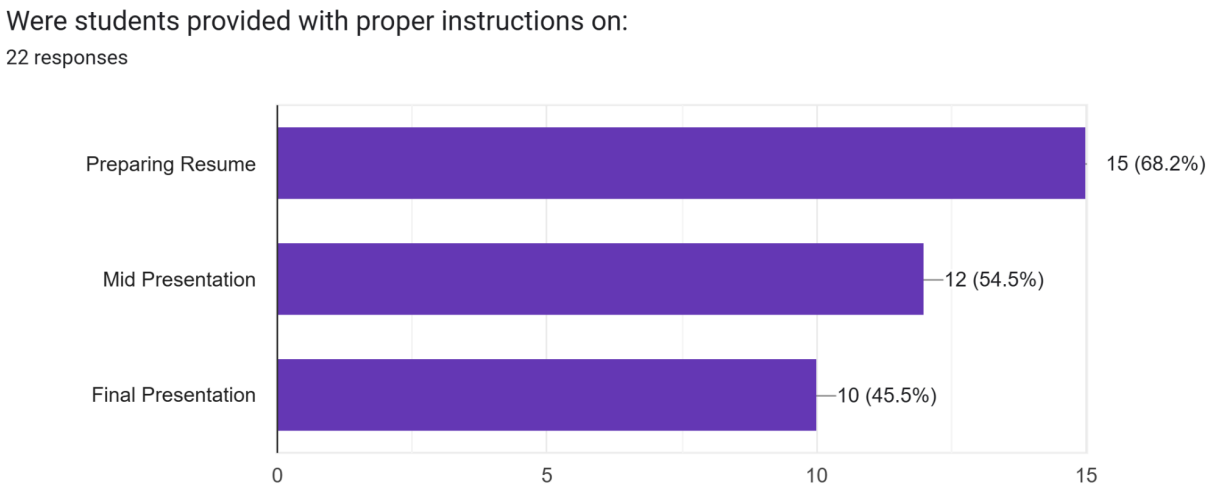


Figure-07: The instructions respondents were provided with

Q8:

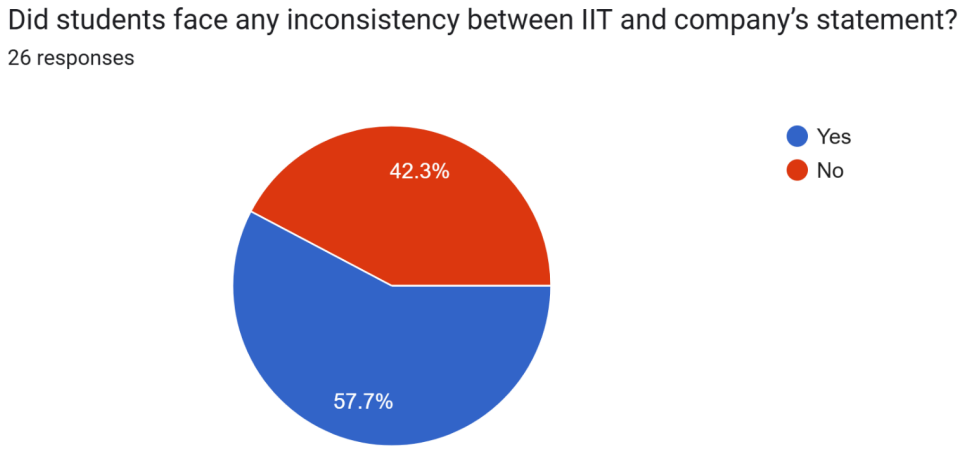


Figure-08: Inconsistency faced by respondents'

Q9:

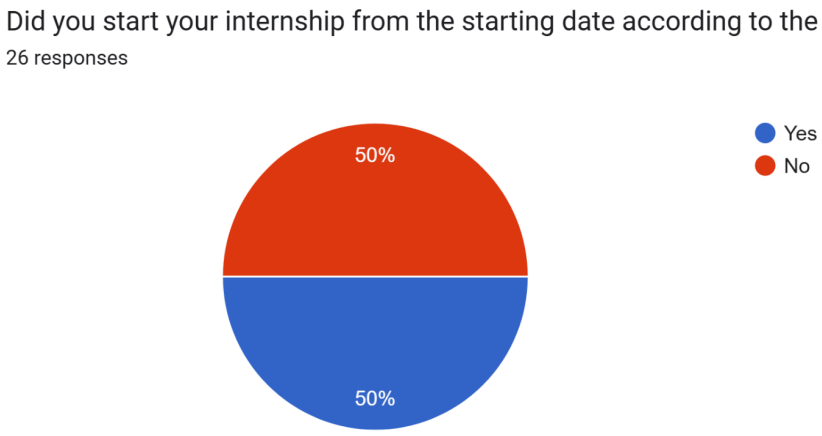


Figure-09: Respondents' starting date of the internship

Q10:

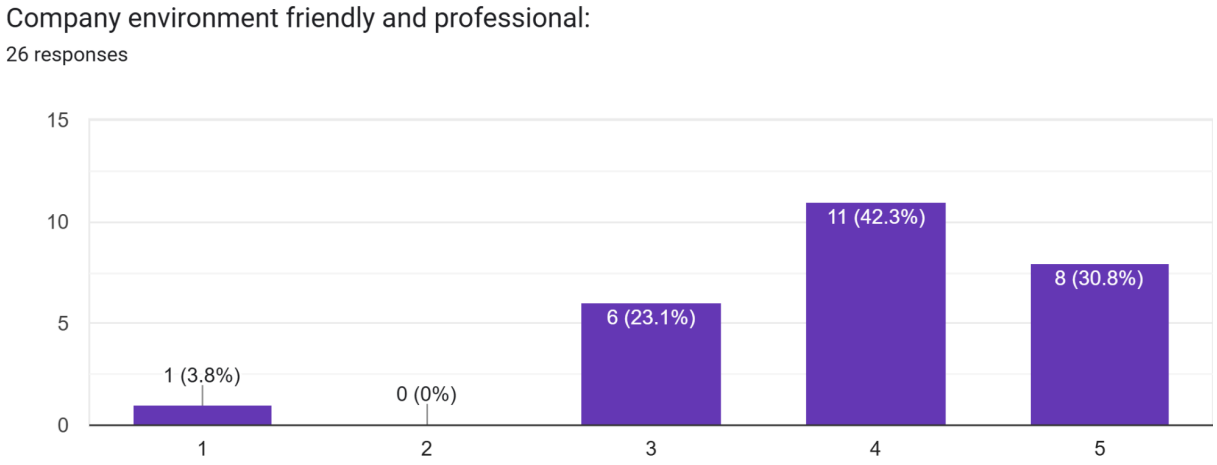


Figure-10: Respondents' opinion about their allocated company's environment

Q11:

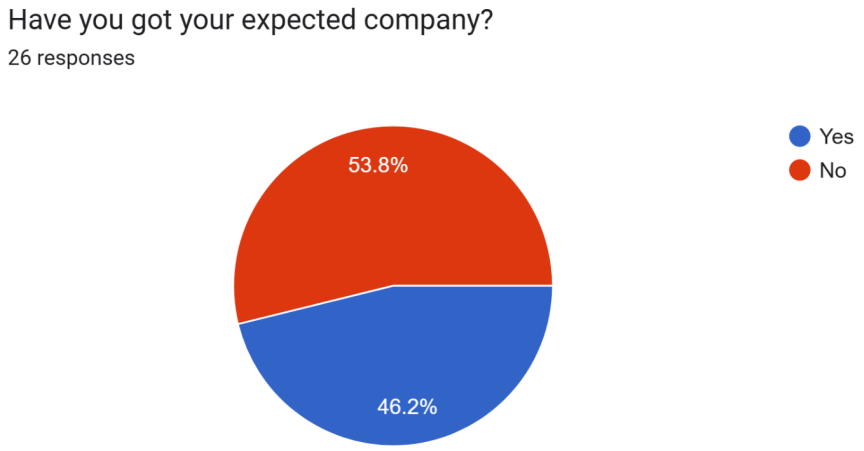


Figure-11: Respondents got their expected company

Q12:

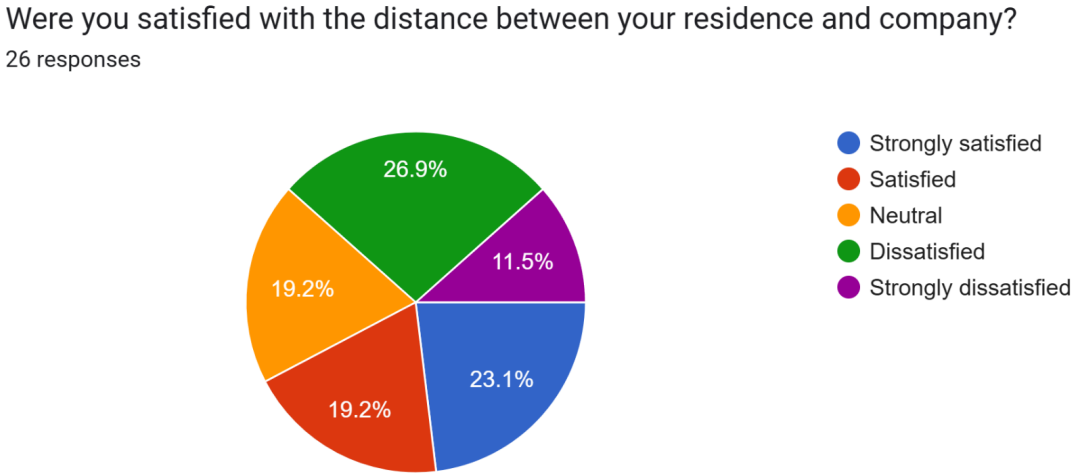


Figure-12: Respondents' satisfaction about the distance between their residence and company

Q13:

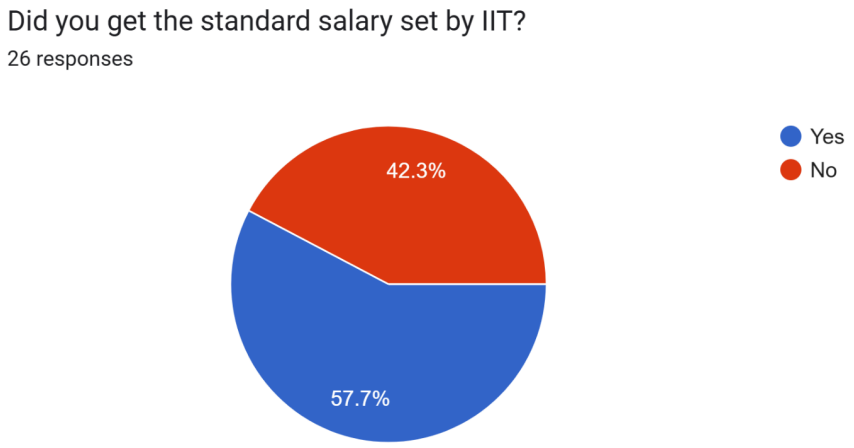


Figure-13: Respondents got the standard salary set by IIT

Q14:

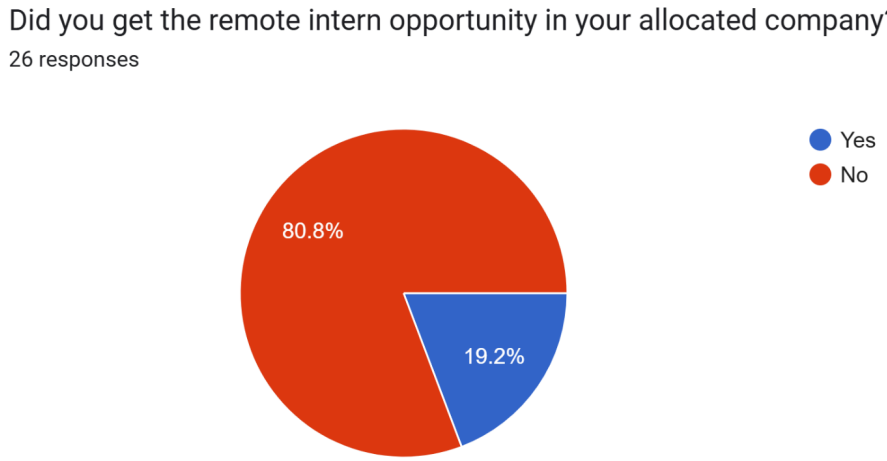


Figure-14: Respondents got the remote intern opportunity

6 Metrics Analysis

Q5: Did you think students should have been given the chance to apply individually and get to select their expected company?

H80

	A	B	C	D	E	F	G	H
71	Did you think students should have been given the chance to apply individually and get to select their expected company?							
72	Strongly Disagre	2				Observed	Expected	
73	Disagree	6			Disagree Group	8	9	
74	Neutral	7			Neutral Group	7	9	
75	Agree	11			Agree group	12	9	
76	Strongly Agree	1			X^2	0.1728		
77		27			P value:	0.459425824		
78					d.f	2		
79								
80					H0: No differences			
81					H1: Significact differences			
82								
83						P>0.05, NULL accepted		
84								

Figure15 : Chi-square test on Q5

H0: It does not have any significant impact if students are given chance to apply individually and get to select expected company
H1: It has a significant impact if students are given chance to apply individually and get to select expected company

Disagree group consists of strongly disagree and disagree: 8
Neutral group: 7
Agree group consists of strongly agree and agree: 12
Total value: 27
Expected value for each group is 27/3 = 9

Chi-square test

$$\chi^2 = \frac{\sigma s^2}{\sigma p^2}(n-1)$$

$$\chi^2 = \sum \frac{(Oij - Eij)^2}{Eij}$$

Degree of Freedom	Probability of Exceeding the Critical Value								
	0.99	0.95	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.000	0.004	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.020	0.103	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.115	0.352	0.584	1.212	2.366	4.11	6.25	7.81	11.34
4	0.297	0.711	1.064	1.923	3.357	5.39	7.78	9.49	13.28
5	0.554	1.145	1.610	2.675	4.351	6.63	9.24	11.07	15.09
6	0.872	1.635	2.204	3.455	5.348	7.84	10.64	12.59	16.81
7	1.239	2.167	2.833	4.255	6.346	9.04	12.02	14.07	18.48
8	1.647	2.733	3.490	5.071	7.344	10.22	13.36	15.51	20.09
9	2.088	3.325	4.168	5.899	8.343	11.39	14.68	16.92	21.67
10	2.558	3.940	4.865	6.737	9.342	12.55	15.99	18.31	23.21
11	3.053	4.575	5.578	7.584	10.341	13.70	17.28	19.68	24.72
12	3.571	5.226	6.304	8.438	11.340	14.85	18.55	21.03	26.22
13	4.107	5.892	7.042	9.299	12.340	15.98	19.81	22.36	27.69
14	4.660	6.571	7.790	10.165	13.339	17.12	21.06	23.68	29.14
15	5.229	7.261	8.547	11.037	14.339	18.25	22.31	25.00	30.58
16	5.812	7.962	9.312	11.912	15.338	19.37	23.54	26.30	32.00
17	6.408	8.672	10.085	12.792	16.338	20.49	24.77	27.59	33.41
18	7.015	9.390	10.865	13.675	17.338	21.60	25.99	28.87	34.80
19	7.633	10.117	11.651	14.562	18.338	22.72	27.20	30.14	36.19
20	8.260	10.851	12.443	15.452	19.337	23.83	28.41	31.41	37.57
22	9.542	12.338	14.041	17.240	21.337	26.04	30.81	33.92	40.29
24	10.856	13.848	15.659	19.037	23.337	28.24	33.20	36.42	42.98
26	12.198	15.379	17.292	20.843	25.336	30.43	35.56	38.89	45.64
28	13.565	16.928	18.939	22.657	27.336	32.62	37.92	41.34	48.28
30	14.953	18.493	20.599	24.478	29.336	34.80	40.26	43.77	50.89
40	22.164	26.509	29.051	33.660	39.335	45.62	51.80	55.76	63.69
50	27.707	34.764	37.689	42.942	49.335	56.33	63.17	67.50	76.15
60	37.485	43.188	46.459	52.294	59.335	66.98	74.40	79.08	88.38
	Not Significant							*Significant*	

Chi square test was done on the three groups. The p-value is calculated using the CHITEST function. The significance level is considered to be 0.05.

P value > 0.05

Null hypothesis accepted. So it does not have any significant impact if students are given a chance to apply individually and get to select an expected company.

Q6:Was your IPO committee student friendly?

fx H0: YES>=0.5

A	B	C	D	E	F	G	H
Was your IPO committee student friendly?							
YES	9			H0: YES>=0.5			
NO	18			H1: YES<0.5			
	27						
				p^ = 0.3333		Z= -1.73	
				p0 = 0.5		reject NULL Hypothesis	
				alpha =0.05			
				n= 27			

Figure16 : Z-test on Q6

Z test is performed on probabilistic discrete response Yes and No.

Yes: 9
No: 18
Total: 27

$$Z_{calc} = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

H0: Most of the interns think that IPO committee was student friendly
H1: Most of the interns do not think that IPO committee was student friendly

p^ = 9/27 =0.333, p0= 0.5, n=27
Z value < -1.645

Z value = -1.73 in rejection region for alpha 0.05

NULL rejected.
So it can be concluded that most of the interns believe their IPO committee was not student friendly.

Q8: Did students face any inconsistency between IIT and company's statement?

15	Did students face any inconsistency between IIT and company's statement?					
16	YES	16		H0: YES>=0.5		
17	NO	11		H1: YES<0.5		
18		27				
19				p^ = 0.592	Z= 0.96	
20				p0 = 0.5	Cannot reject NULL Hypothesis	
21				alpha =0.05		
22				n= 27		

Figure17 : Z-test on Q8

Z test is performed on probabilistic discrete response Yes and No.
Yes: 16
No: 11
Total: 27

H0: Most of the interns faced inconsistency between IIT and company's statement
H1: Most of the interns did not face any inconsistency between IIT and company's statement

$$Z_{calc} = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

p^ = 16/27=0.592 , p0= 0.5, n=27
Z value > -1.645

Z value = 0.96 in acceptance region for alpha 0.05

NULL accepted.
So it can be concluded that most of the interns faced inconsistency between IIT and company's statement.

Q9: Did you start your internship from the starting date according to the academic calendar?

	A	B	C	D	E	F	G	H
30	Did you start your internship from the starting date according to the academic calendar?							
31	YES	13			H0: YES>=0.5			
32	NO	14			H1: YES<0.5			
33		27						
34					p^ = 0.481		Z= -0.192	
35					p0 = 0.5		Cannot reject NULL Hypothesis	
36					alpha =0.05			
37					n= 27			
38								
39								

Figure18: Z-test on Q9

Z test is performed on probabilistic discrete response Yes and No.
Yes: 13
No: 14
Total: 27

$$Z_{calc} = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

H0: Most of the interns started internship according to academic calender
H1: Most of the interns did not start internship according to academic calender

p^ = 13/27=0.481 , p0= 0.5, n=27
Z value > -1.645

Z value = -0.192 not in rejection region for alpha 0.05

NULL can not be rejected.
So it can be concluded that most of the interns might have started their internship according to the academic calendar.

Q10: Company environment friendly and professional:

93	Company environment friendly and professional:					
94	4					
95	5					
96	1		alpha	0.05		
97	4		Mean	3.925925926	H0: rating>=3	
98	3		Standard Deviati	0.9577989963	H1: rating <3	
99	3		d.f.	26		
100	5		t value	4.9293		
101	3		expected value	1.706	Reject NULL Hypothesis	
102	4					
103	4					

Figure19 : T-test on Q10

One sample t-test is performed here to determine how friendly and professional the companies were where the interns are previously placed.

Ratings are numbered from (1 to 5) stars.

H0: Company environment was friendly and professional (rating >=3)
H1: Company environment was not friendly and professional (rating <3)

Alpha :0.05
Mean : 3.92
Standard Deviation: 0.9578
degrees of freedom: 26
Expected t value from t-table= 1.706

$$t = \frac{\bar{x} - \mu}{s / \sqrt{n}}$$

t = t-statistic
$\bar{x}$ = sample mean
μ = hypothesis mean
s = sample standard deviation
n = sample count

Calculated t-value = 4.9293 > t-table value; Null hypothesis rejected

So this distribution shows that most of the companies where interns were placed were not student friendly and professional.

Q11: Have you got your expected company?

45	Have you got your expected company?					
46	YES	12		H0: YES>=0.5		
47	NO	15		H1: YES<0.5		
48		27				
49				p^ = 0.444	Z= -0.577	
50				p0 = 0.5	Cannot reject NULL Hypothesis	
51				alpha =0.05		
52				n= 27		

Figure 20: Z-test on Q11

Z test is performed on probabilistic discrete response Yes and No.
Yes: 12
No: 15
Total: 27

$$Z_{calc} = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

H0: Most of the interns got their expected companies
H1: Most of the interns did not get their expected companies

p^ = 12/27=0.444 , p0= 0.5, n=27
Z value > -1.645

Z value = 0.577 not in rejection region for alpha 0.05

NULL can not be rejected.
Therefore the distribution portrays that most of the interns might have got their expected companies but it does not show if the alternating hypothesis is rejected.

Q12: Were you satisfied with the distance between your residence and company?

	A	B	C	D	E	F	G
129	Were you satisfied with the distance between your residence and company?						
130	Strongly Dissatif	3				Observed	Expected
131	Dissatisfied	7			Dissatified Grou	10	9
132	Neutral	6			Neutral Group	6	9
133	Satisfied	5			Satisfied group	11	9
134	Strongly Satisfie	6					
135		27			P value:	0.459425824	
136					d.f	2	
137							
138					H0: No differences		
139					H1: Signifiact differences		
140							
141						P>0.05, NULL accepted	
142							

Figure21 : Chi-square test on Q

H0: It does not have any significant impact between the distance of residence and company
H1: It does has a significant impact between the distance of residence and company

Dissatisfied group consists of strongly dissatisfied and satisfied: 10
Neutral group: 6
Satisfied group consists of strongly satisfied and satisfied: 11
Total value: 27
Expected value for each group is 27/3 = 9

Chi-square test

$$\chi^2 = \frac{\sigma s^2}{\sigma p^2}(n-1)$$

$$\chi^2 = \sum \frac{(Oij - Eij)^2}{Eij}$$

Degree of Freedom	Probability of Exceeding the Critical Value								
	0.99	0.95	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.000	0.004	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.020	0.103	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.115	0.352	0.584	1.212	2.366	4.11	6.25	7.81	11.34
4	0.297	0.711	1.064	1.923	3.357	5.39	7.78	9.49	13.28
5	0.554	1.145	1.610	2.675	4.351	6.63	9.24	11.07	15.09
6	0.872	1.635	2.204	3.455	5.348	7.84	10.64	12.59	16.81
7	1.239	2.167	2.833	4.255	6.346	9.04	12.02	14.07	18.48
8	1.647	2.733	3.490	5.071	7.344	10.22	13.36	15.51	20.09
9	2.088	3.325	4.168	5.899	8.343	11.39	14.68	16.92	21.67
10	2.558	3.940	4.865	6.737	9.342	12.55	15.99	18.31	23.21
11	3.053	4.575	5.578	7.584	10.341	13.70	17.28	19.68	24.72
12	3.571	5.226	6.304	8.438	11.340	14.85	18.55	21.03	26.22
13	4.107	5.892	7.042	9.299	12.340	15.98	19.81	22.36	27.69
14	4.660	6.571	7.790	10.165	13.339	17.12	21.06	23.68	29.14
15	5.229	7.261	8.547	11.037	14.339	18.25	22.31	25.00	30.58
16	5.812	7.962	9.312	11.912	15.338	19.37	23.54	26.30	32.00
17	6.408	8.672	10.085	12.792	16.338	20.49	24.77	27.59	33.41
18	7.015	9.390	10.865	13.675	17.338	21.60	25.99	28.87	34.80
19	7.633	10.117	11.651	14.562	18.338	22.72	27.20	30.14	36.19
20	8.260	10.851	12.443	15.452	19.337	23.83	28.41	31.41	37.57
22	9.542	12.338	14.041	17.240	21.337	26.04	30.81	33.92	40.29
24	10.856	13.848	15.659	19.037	23.337	28.24	33.20	36.42	42.98
26	12.198	15.379	17.292	20.843	25.336	30.43	35.56	38.89	45.64
28	13.565	16.928	18.939	22.657	27.336	32.62	37.92	41.34	48.28
30	14.953	18.493	20.599	24.478	29.336	34.80	40.26	43.77	50.89
40	22.164	26.509	29.051	33.660	39.335	45.62	51.80	55.76	63.69
50	27.707	34.764	37.689	42.942	49.335	56.33	63.17	67.50	76.15
60	37.485	43.188	46.459	52.294	59.335	66.98	74.40	79.08	88.38
	Not Significant							*Significant*	

Chi square test was done on the three groups. The p-value is calculated using the CHITEST function. The significance level is considered to be 0.05.

P value > 0.05

Null hypothesis accepted. So it does not have any significant impact between the distance of residence and company.

Q14: Did you get the remote intern opportunity in your allocated company?

	A	B	C	D	E	F	G	H
58	Did you get the remote intern opportunity in your allocated company?							
59	YES	5			H0: YES>=0.5			
60	NO	22			H1: YES<0.5			
61		27						
62					p^ = 0.185		Z= -3.27	
63					p0 = 0.5		reject NULL Hypothesis	
64					alpha =0.05			
65					n= 27			
66								

Figure22 : Z-test on Q14

Z test is performed on probabilistic discrete response Yes and No.
Yes: 5
No: 22
Total: 27

$$Z_{calc} = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

H0: Most of the interns got remote intern opportunity from the company
H1: Most of the interns did not get remote intern opportunity from the company

p^ = 5/27 =0.185, p0= 0.5, n=27
Z value < -1.645

Z value = -3.27 in rejection region for alpha 0.05

NULL rejected.
So it can be concluded that most of the interns did not get remote intern opportunities from the company.

7. Result of Analysis

We have 3 sub goals with 8 questions and hypotheses. Among them, we rejected 3 null hypotheses and accepted 5 null hypotheses. We performed the Z-test, t-test and chi square test.

Question	Null Hypothesis	Test	Result
Q5: Did you think students should have been given the chance to apply individually and get to select their expected company?	H0: It does not have any significant impact if students are given chance to apply individually and get to select expected company	Chi-square test. Null accepted	So it does not have any significant impact if students are given a chance to apply individually and get to select an expected company.
Q6:Was your IPO committee student friendly?	H0: Most of the interns think that IPO committee was student friendly	Z-test Null rejected	Most of the interns believe their IPO committee was not student friendly.
Q8: Did students face any inconsistency between IIT and company's statement?	H0: Most of the interns faced inconsistency between IIT and company's statement	Z-test Null accepted	Most of the interns faced inconsistency between IIT and company's statement.
Q9: Did you start your internship from the starting date according to the academic calendar?	H0: Most of the interns started internship according to academic calender	Z-test Null can not be rejected	Most of the interns might have started their internship according to the academic calendar.
Q10: Company environment friendly and professional:	H0: Company environment was friendly and professional (rating >=3)	T-test Null rejected	Most of the companies where interns were placed were not student

			friendly and professional.
Q11: Have you got your expected company?	H0: Most of the interns got their expected companies	Z-test Null can not be rejected	Most of the interns might have got their expected companies but it does not show if the alternating hypothesis is rejected.
Q12: Were you satisfied with the distance between your residence and company?	H0: It does not have any significant impact between the distance of residence and company	Chi-square test Null accepted	It does not have any significant impact between the distance of residence and company.
Q14: Did you get the remote intern opportunity in your allocated company?	H0: Most of the interns got remote intern opportunity from the company	Z-test Null rejected	Most of the interns did not get remote intern opportunities from the company.

Table 1 : Result of Analysis

8. Conclusion

This study illuminates the experiences and expectations of IIT students regarding the internship process. It reveals that while students enter their internships with certain expectations, factors like company selection, work environment, salary standards, and logistical challenges are crucial in shaping their overall satisfaction.

The findings highlight the importance of clear communication between IIT and companies, the need for standardized policies, and better student support. Ensuring that the work environment is healthy and friendly, offering at least a minimum standard salary, and minimizing the distance students need to travel are key factors that can significantly enhance the internship experience. Strengthening these aspects can lead to a more structured and effective internship process, ultimately benefiting students' career development.

9. References

Survey questionnaire link:
https://docs.google.com/forms/d/e/1FAIpQLSdqoU_H4pR7z-JWcbdlZtFa2nBKH7u7ScxGHoBoTh-ZQBSWLQ/viewform?usp=dialog

Excel response sheet:
https://docs.google.com/spreadsheets/d/1HXcAjNuasaDCKSJhNNmuVBOxY2CXbzyq5XtX69I0hD4/edit?fbclid=IwY2xjawHwpVtleHRuA2FlbQIxMAABHcRo0cE73QLoDw8lkvoogy3YYVjlhFVs6-BeXut69zZ0zUUrxxjWmWWlcQ_aem_ovIqJUGA3EhHOVU4iKDX_w&gid=1335799606#gid=1335799606

Statistical test link:
https://docs.google.com/spreadsheets/d/1fxHMCxZXRx16GiOXX-XJ3BB_psyzhloOQU7LVh-615o/edit?gid=0#gid=0