

APPLIED BUSINESS RESEARCH

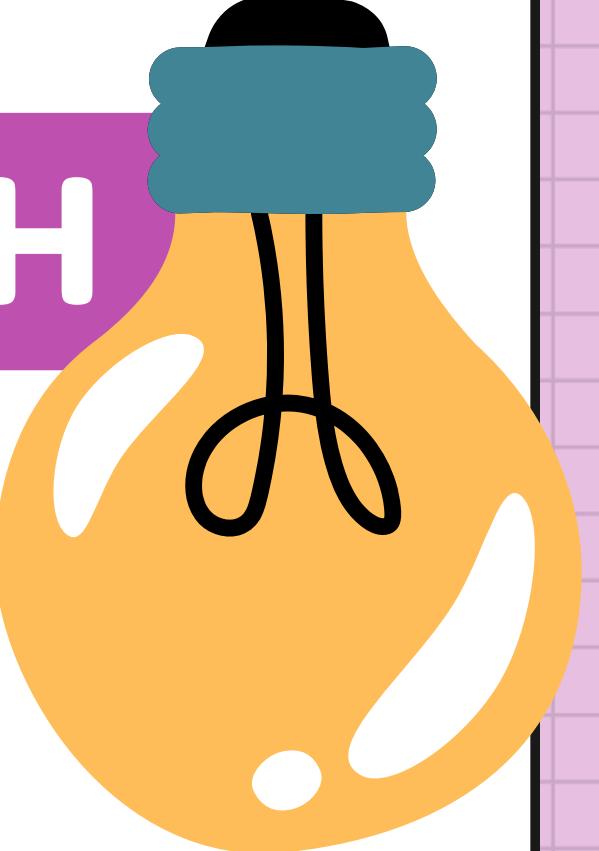
PROJECT

Group - A

ee

91

22



GROUP MEMBERS

1

Malavika Ajay Nair

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BROAD THEMES BRAINSTORMED

Customer Satisfaction and Loyalty in Online Retail

Packaging Design and Consumer Perception

Student Engagement and Academic Performance

In-Store Promotions and Consumer Purchasing Behavior

Online Customer Reviews and Product Perception

Social Media Advertising and Consumer Purchasing Behavior

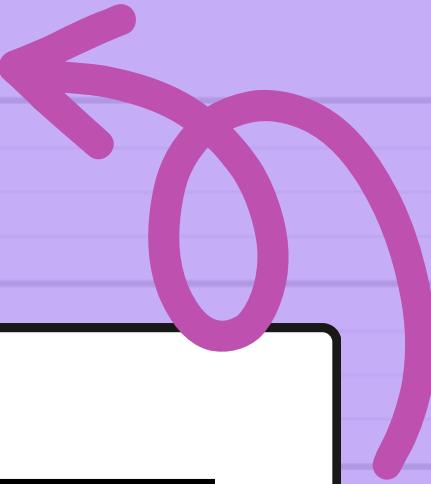
TOPICS BRAINSTORMED



- Exploring the factors contributing to customer satisfaction and loyalty in the online retail sector. Investigate the impact of website navigation, product quality, and delivery time on customer perceptions, satisfaction levels, and the likelihood of repeat purchases.
- Investigating the impact of packaging design on consumer perceptions and purchasing decisions. Explore how visual elements, aesthetics, and branding in product packaging influence consumer preferences and perceptions of product quality.
- Exploring the correlation between student engagement, study habits, and academic performance in a college setting. Examine how active participation in extracurricular activities, effective study routines, and other engagement factors contribute to academic success.



- Analyzing the effectiveness of in-store promotions in shaping consumer purchasing behavior. Investigate how factors like customer loyalty and individual shopping motivations moderate the impact of promotional strategies on consumer decisions.
- Examining the influence of online customer reviews on consumers' perceptions of products. Investigate how the quantity and sentiment of reviews impact consumer trust, product evaluation, and the likelihood of making a purchase in an online shopping environment.
- Studying the role of social media advertising in shaping consumer behavior. Analyze how various aspects of social media campaigns, including content and engagement, influence consumer trust, product evaluation, and the decision-making process.



TOPIC SHORTLISTED



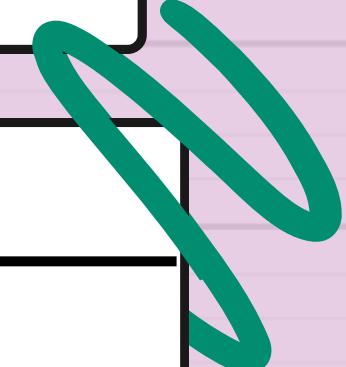
Customer Satisfaction and Loyalty in Online Retail

Investigating factors contributing to customer satisfaction and loyalty in online retail, this research analyzes the impact of website navigation, product quality, and delivery time on customer perceptions. The study aims to provide insights for online retailers aiming to enhance customer satisfaction and foster loyalty in a competitive digital marketplace.



Student Engagement and Academic Performance

Exploring the nexus between student engagement, study habits, and academic performance, this research aims to uncover how active involvement in extracurricular activities and effective study routines contribute to overall success in a college setting. The study seeks to provide valuable insights for educators and institutions striving to enhance student engagement and academic outcomes.



TOPIC SHORTLISTED



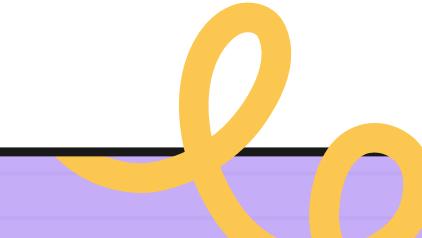
In-Store Promotions and Consumer Purchasing Behavior

Analyzing the effectiveness of in-store promotions, this research delves into the intricate relationship between promotional strategies and consumer decision-making. By considering factors like customer loyalty and individual shopping motivations, the study aims to offer actionable insights for retailers aiming to optimize their in-store promotional approaches.



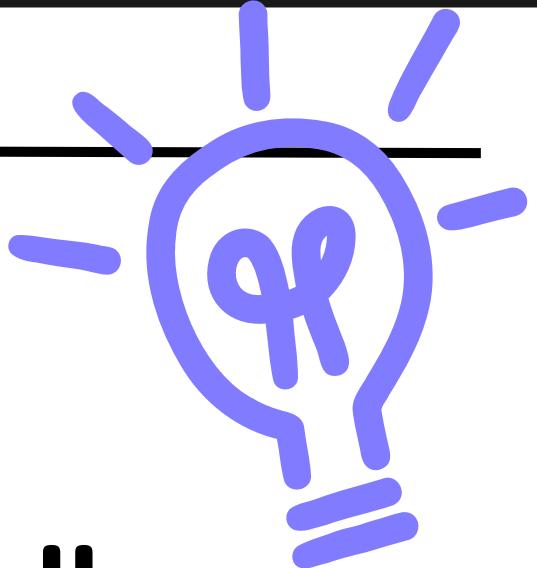
Social Media Advertising and Consumer Purchasing Behavior

Focusing on the role of social media advertising, this research analyzes various elements of social media campaigns. By studying content and engagement, the research aims to understand the impact of social media on consumer trust, product evaluation, and decision-making processes in the realm of online commerce.





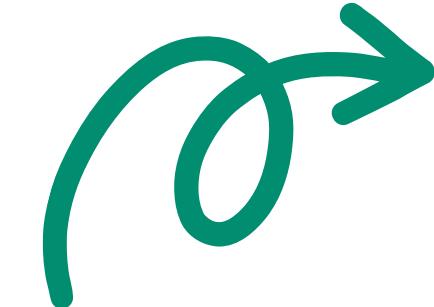
TOPIC SELECTED



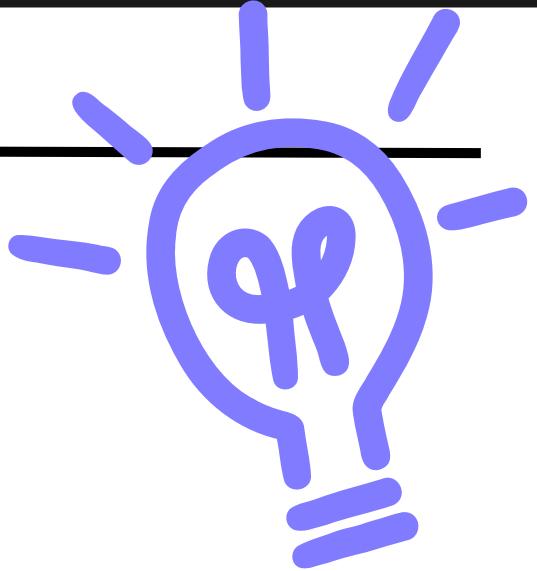
Student Engagement and Academic Performance in College

IN CONTEMPORARY HIGHER EDUCATION, THE INTRICATE DYNAMICS BETWEEN COLLEGE STUDENT ENGAGEMENT, STUDY HABITS, AND ACADEMIC PERFORMANCE CONSTITUTE A CRITICAL YET UNDERSTUDIED DOMAIN. DESPITE THE RECOGNIZED IMPORTANCE OF STUDENT INVOLVEMENT IN EXTRACURRICULAR ACTIVITIES AND EFFECTIVE STUDY PRACTICES, A COMPREHENSIVE UNDERSTANDING OF HOW THESE FACTORS COLLECTIVELY INFLUENCE ACADEMIC SUCCESS REMAINS ELUSIVE. THIS RESEARCH ADDRESSES THE NEED FOR AN IN-DEPTH ANALYSIS TO UNCOVER THE INTRICATE RELATIONSHIPS AMONG STUDENT ENGAGEMENT, STUDY HABITS, AND ACADEMIC PERFORMANCE WHILE CONSIDERING THE MODERATING IMPACT OF INTRINSIC MOTIVATION.





HYPOTHESIS



- **Null Hypothesis (H_0) : There is no relationship between student engagement and academic performance.**
- **Alternate Hypothesis (H_1) : There is a relationship between student engagement and academic performance.**



RESEARCH VARIABLES

Dependent Variable

Academic Performance

Independent Variables

Student Engagement:

- Behavioral Engagement
- Cognitive Engagement
- Emotional Engagement

RESEARCH VARIABLES



Independent Variable:

- **Student Engagement:**

- **Behavioral Engagement:** Examples: Asking questions, participating in discussions, attendance, homework completion.
- **Cognitive Engagement:** Examples: Draft preparation, integrating ideas, using electronic media for discussions, studying regularly.
- **Emotional Engagement:** Examples: Working with diverse perspectives, tutoring, participating in community-based projects, having serious conversations.

Dependent Variable:

- **Academic Performance:** Measure through CGPA .

Moderating Variables:

- **Intrinsic Motivation:** Questions related to inherent interest and enjoyment in an activity.

Control Variables:

- **Demographic Variable:** Academic year can be considered control variables.



QUESTIONNAIRE DESIGN

Pre-Construction Phase

- **Defining Objectives:** The goals and objectives of the questionnaire was to establish/measure the relation between student engagement and academic performance. The specific aspects of student engagement and academic performance which had to be measured were thought of.
- **Literature Review:** A review of existing literature on student engagement and academic performance were referred to, to understand relevant concepts, theories, and measurement tools.
- **Identifying Constructs:** Based on the literature review, the key constructs were identified that were relevant to our research objectives. These included factors like attendance, participation, study habits, motivation, etc.
- **Development of Initial Items:** A pool of potential questionnaire items was generated related to the identified constructs.

QUESTIONNAIRE DESIGN

Construction

- **Pilot Testing:** The initial version of the questionnaire was sent to a students to identify any potential issues with clarity, wording, or comprehension. Using this feedback, necessary revisions were made.
- **Item Selection:** The final set of questionnaire items based on the results of pilot testing was shortlisted ensuring that the selected items effectively measure the intended constructs.
- **Scale Development:** Likert Scale was used to measure the participants response.
- **Formatting and Layout:** The questionnaire layout was divided into three phases for clarity,ease of completion & questions presented in a logical order.

QUESTIONNAIRE DESIGN

Post-Construction

- **Final Revisions:** Final revisions were made to the questionnaire based on the results of pilot testing.
- **Administration:** Our target population was students circulating the questionnaire within various student groups was done to ensuring appropriate sampling and data collection procedures can be followed.
- **Data Analysis:** The collected data was analysed using appropriate statistical techniques (Regression and Correlation – Excel) to explore relationships between variables and assess student engagement and academic performance.
- **Reporting:** Summarize the findings of the questionnaire in a comprehensive report highlighting key results, implications, and recommendations for future research.

QUESTIONNAIRE DESIGN

Demographics

	Male	Female	Transgender	Others
1. What is your gender?				
2. What is your age ?	Under 16 years	16-23 years	23-26 years	Above 26 years
3.What is your current religion ?	Christianity	Islam	Jainism	Protectantism
4.What is your current family income ?	Under 5 lac per annum	5-10 lac per annum	10-15 lac per annum	more than 15 lac per annum
5.Which year are you currently in?	1st	2nd	3rd	4th

Behavioral Engagement

Indicators	Frequency				
	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
1. Asking questions in class or contributing to class discussion.					
2. Raising my hand in class.					
3. Participating in small group discussions.					
4. Doing all the homework problems.					
5. Coming to class every day.					
6. Taking good notes in class.					
7. Getting a good grade.					
8. Staying updated on the required readings for a course.					
9. Receiving prompt written or oral feedback from faculty on your academic performance.					
10. Coming to class without completing readings or assignments					
11. Making sure to study on a regular basis.					

QUESTIONNAIRE DESIGN

Cognitive Engagement

Indicators	Frequency				
	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
1. Made a class presentation					
2. Prepared two or more drafts of a paper or assignment before turning it in.					
3. Worked on a paper or project that required integrating ideas or information from various sources.					
4. Put together ideas or concepts from different courses when completing assignments or during class discussion.					
5. Used an electronic medium (Instagram, Whatsapp, E-mail, Internet, etc) to discuss or complete an assignment.					
6. Discussed ideas from your readings or classes with faculty members outside of class.					
7. Putting forth effort.					
8. Used e-mail to communicate with an instructor.					
9. Discussed grades or assignments with an instructor.					
10. Worked harder than you thought you could do to meet an instructor's standards or expectations.					
11. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc)					
12. Going to the professor's office to review assignments or tests, or to ask questions.					
13. Thinking about the course between class meetings.					
14. Finding ways to make the course interesting for yourself.					
15. Looking over class notes between classes to make sure you understand the materials.					
16. Applying course materials to your daily life.					
17. Finding ways to make the course materials relevant to your daily life.					

QUESTIONNAIRE DESIGN

Emotional Engagement

Indicators	Frequency				
	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
1. Included diverse perspectives in class discussions or while writing assignments.					
2. Worked with other students on projects during class.					
3. Worked with classmates outside your class to prepare class assignments.					
4. Tutored or taught other students (paid or voluntary).					
5. Participated actively in college societies.					
6. Had serious conversations with students who are very different from you in terms of their religious, political opinions, or personal values.					
7. Really desiring to learn the materials.					
8. Being confident that you can learn and do well in the class.					
9. Having fun in class.					
10. Worked with faculty members on activities other than course work.					
11. Talked about your career plans with a faculty member or adviser.					

Academic Performance

1. What is your current CGPA?	Below 6 (1)	6.01 - 7 (2)	7.01 - 8 (3)	8.01 - 9 (4)	9.01 - 10 (5)
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QUESTIONNAIRE DESIGN

Intrinsic Motivation (Moderate Variable)

- Have you ever worked harder than you thought you could to meet an instructor's standards or expectations?
- How much effort do you typically put forth in your academic endeavors ?
- Do you look over class notes between classes to ensure understanding of the materials?
- How often do you attend class without completing the required readings or assignments?
- How often do you ensure to study on a regular basis?

Academic Year (Control Variable)

- Which year you are currently in ?

Antithesis Question

- Coming to class without completing readings or assignments?

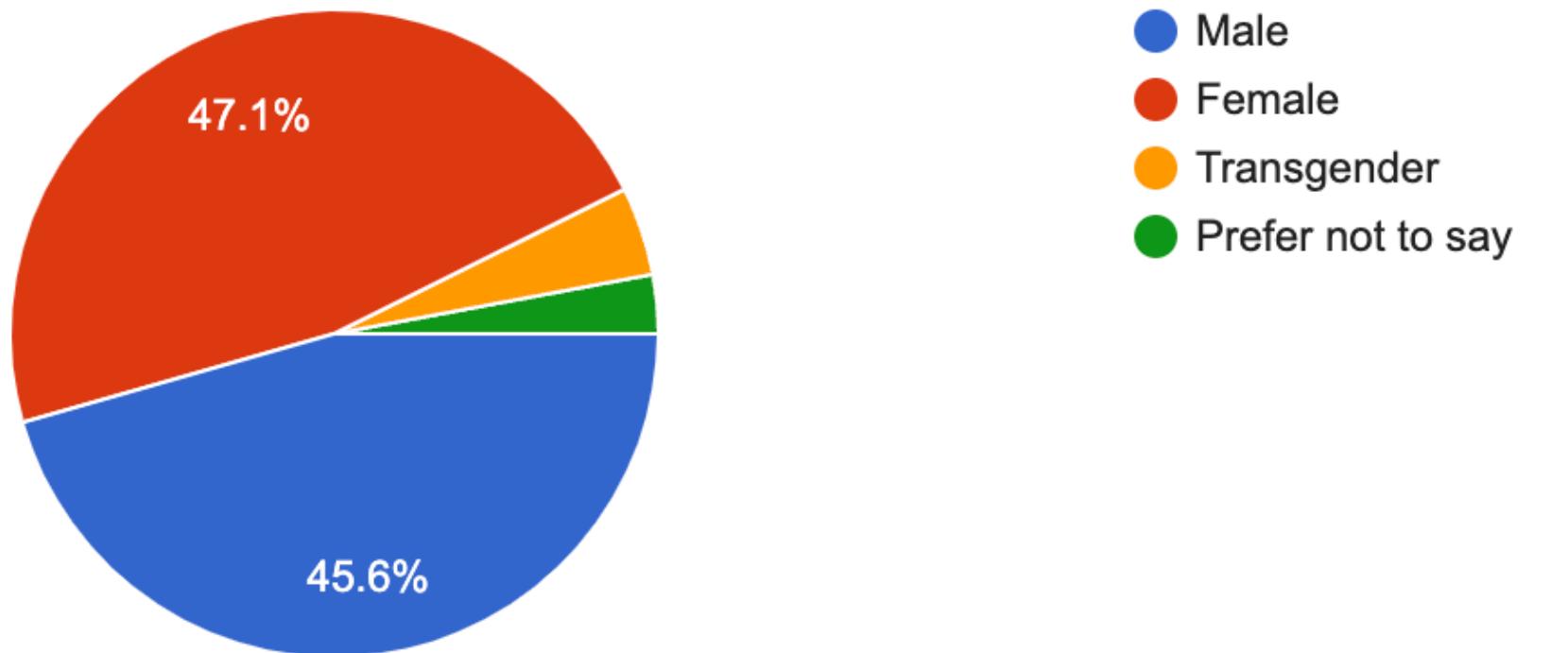
DATA COLLECTED

Demographics

What is your gender ?

68 responses

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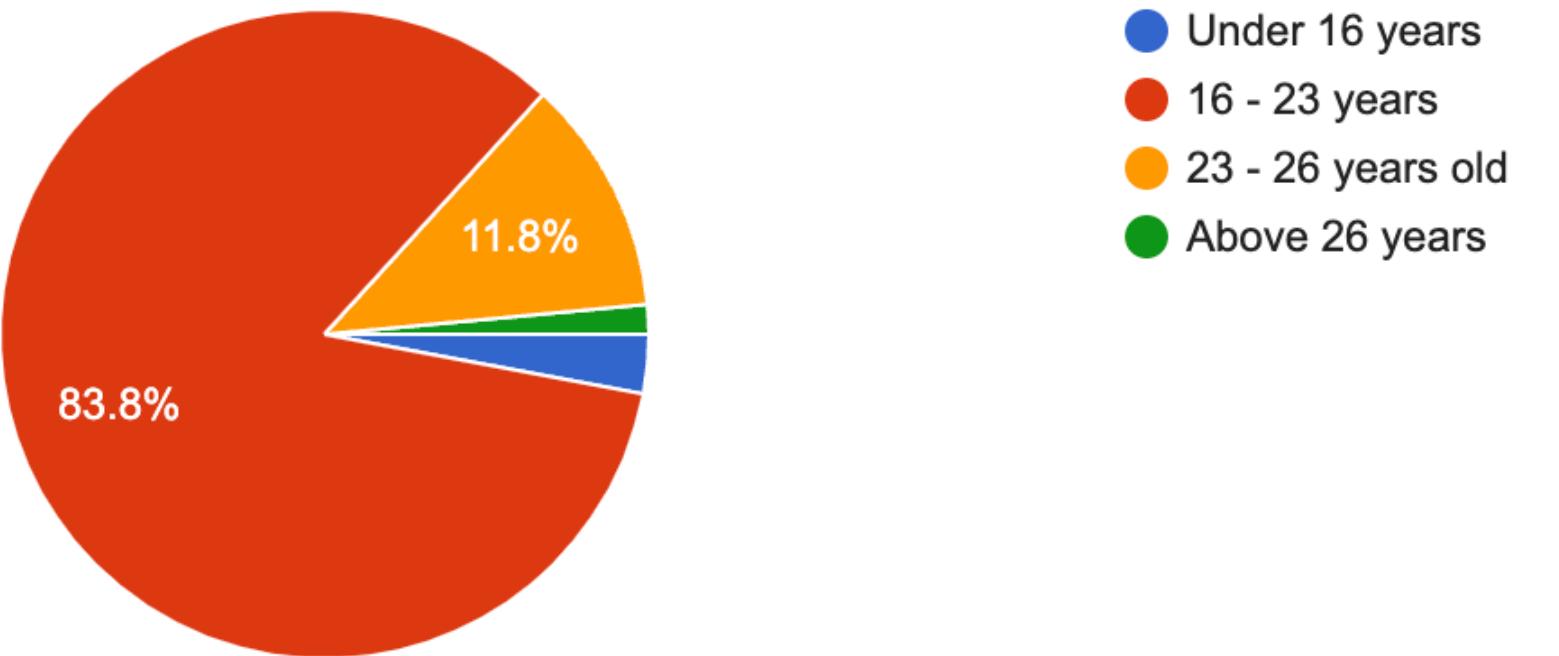


DATA COLLECTED

What is your age ?

68 responses

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DATA COLLECTED

What is your current religion?

68 responses

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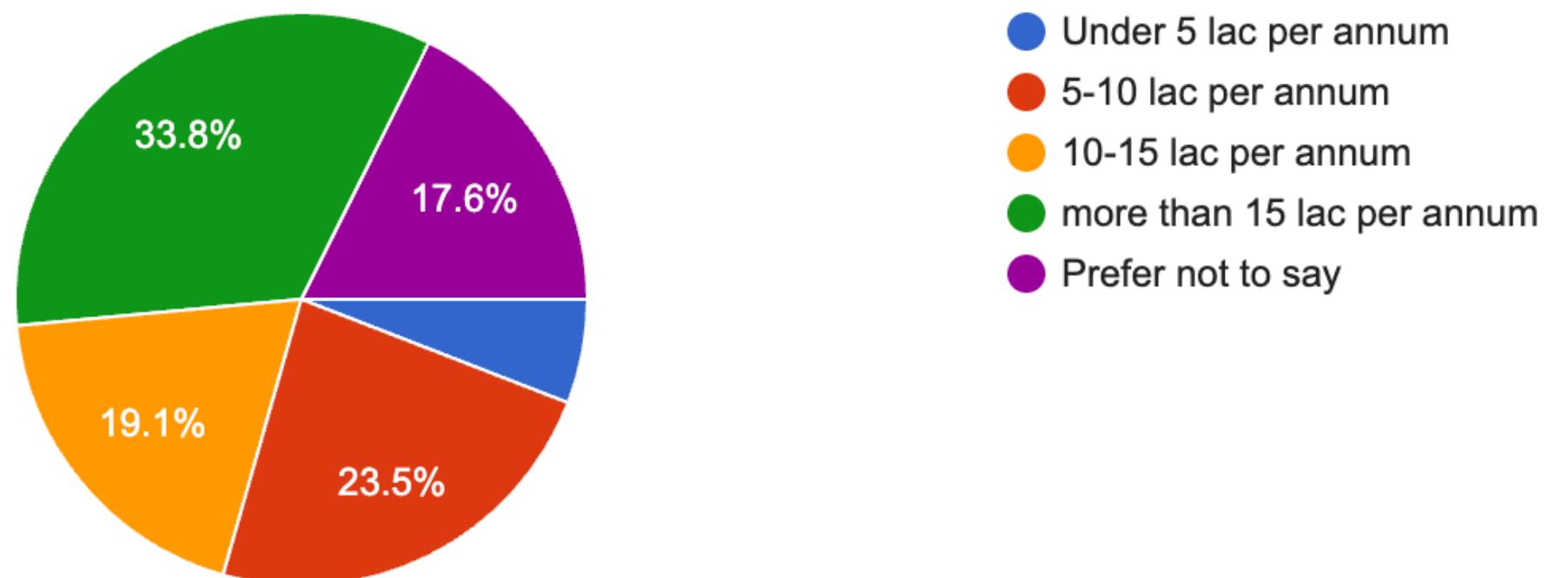


DATA COLLECTED

What is your current family income?

68 responses

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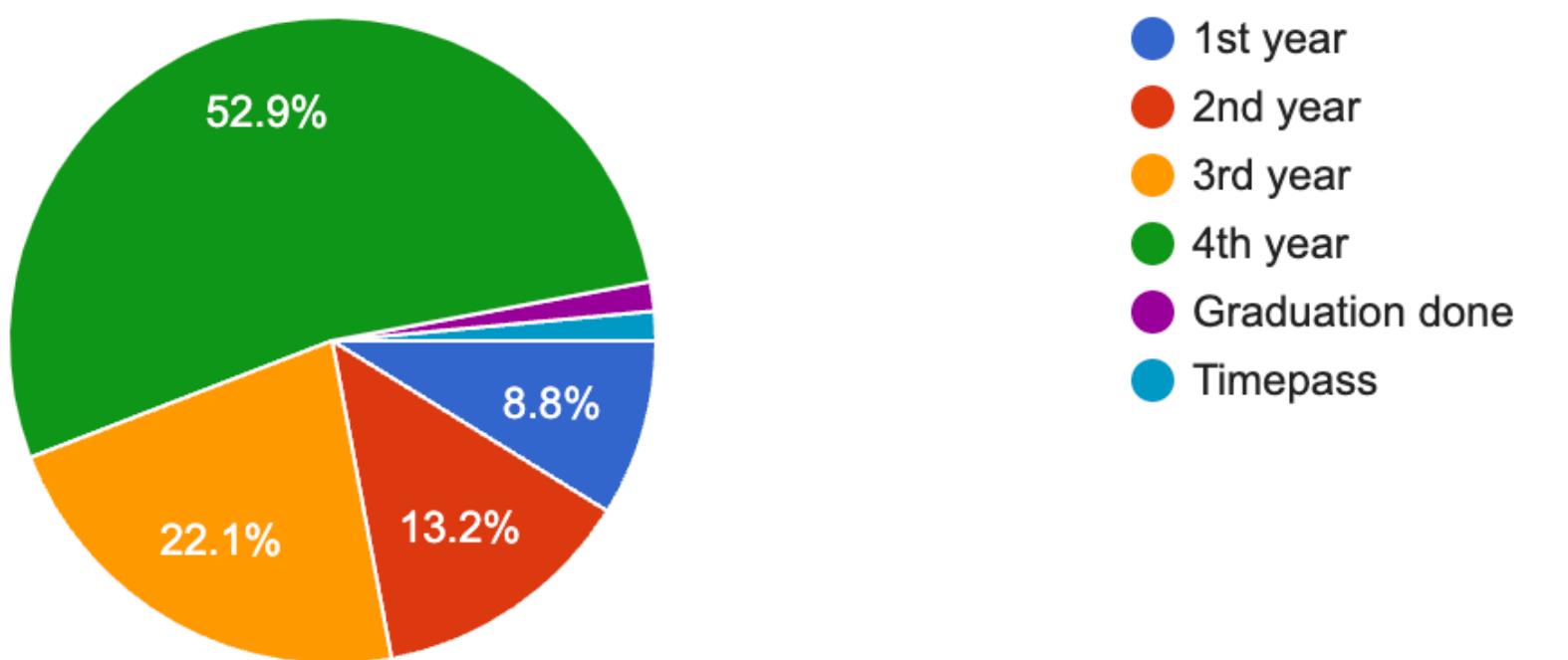


DATA COLLECTED

Which year are you currently in ?

68 responses

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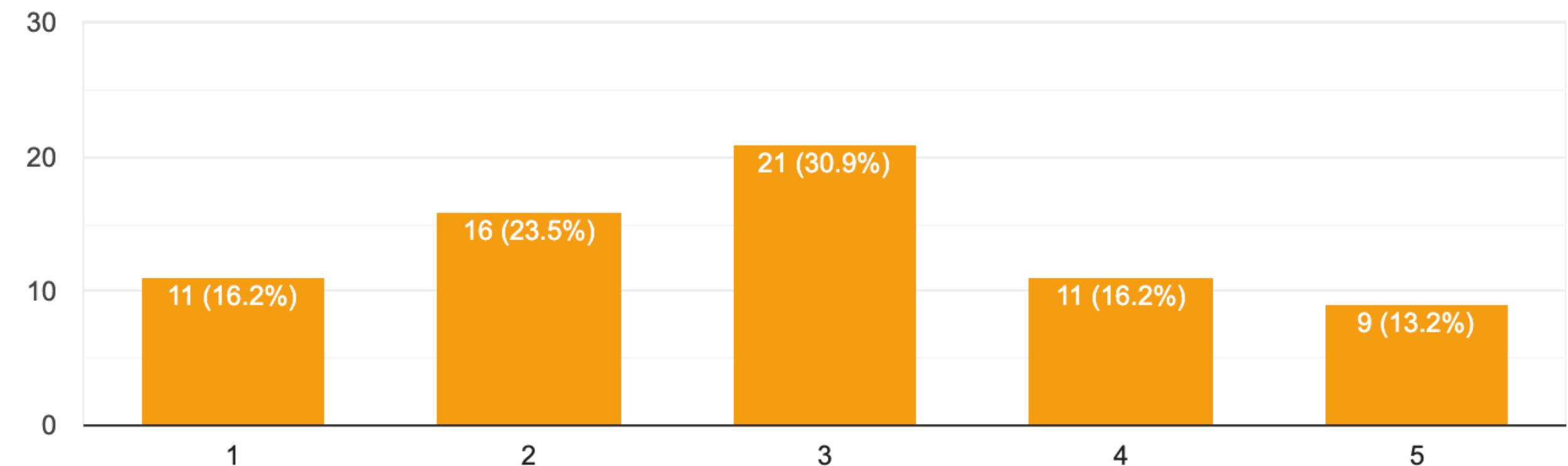
DATA COLLECTED

Behavioral Engagement

How often do you actively participate in class discussions or ask questions during lectures?

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68 responses

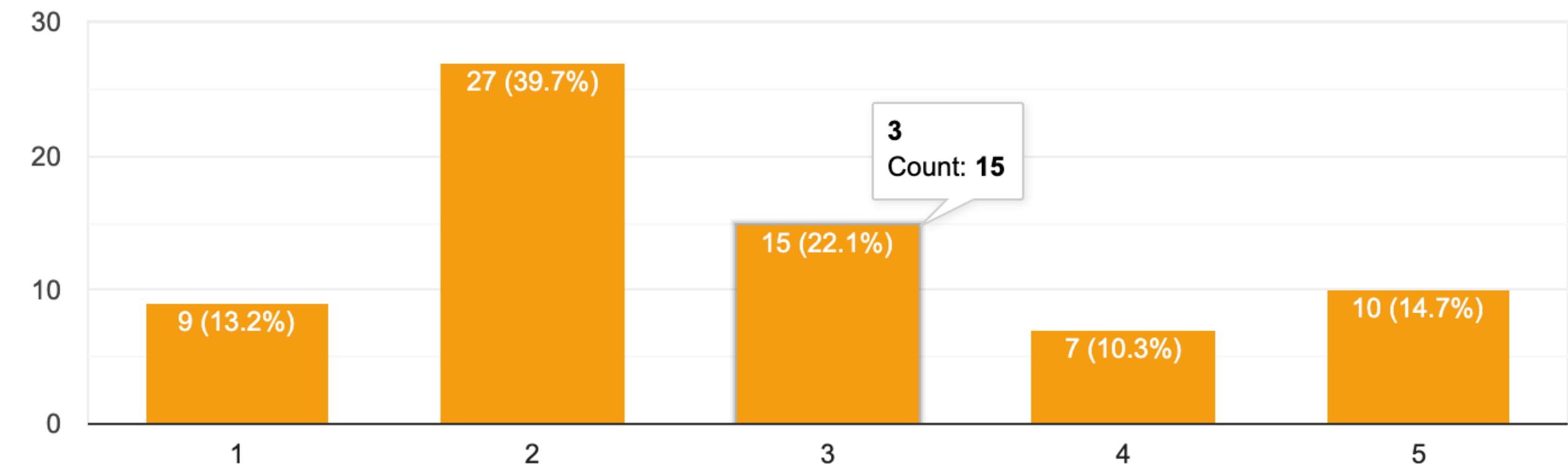


DATA COLLECTED

How frequently do you raise your hand to contribute or ask questions during class sessions?

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68 responses

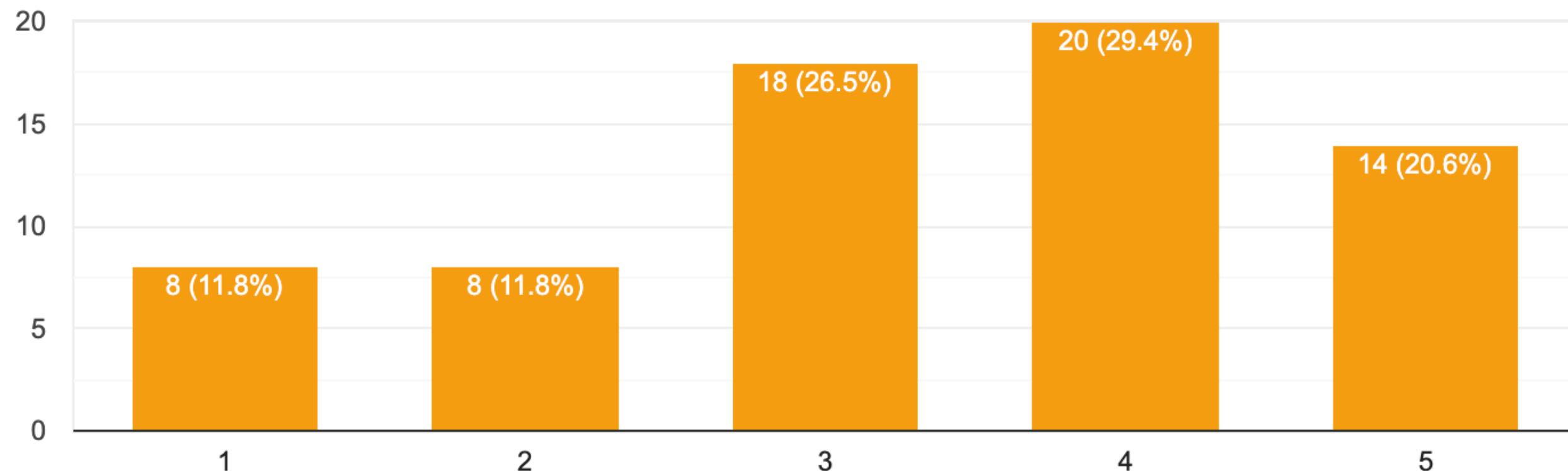


DATA COLLECTED

How frequently do you engage in small group discussions during class activities?

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68 responses

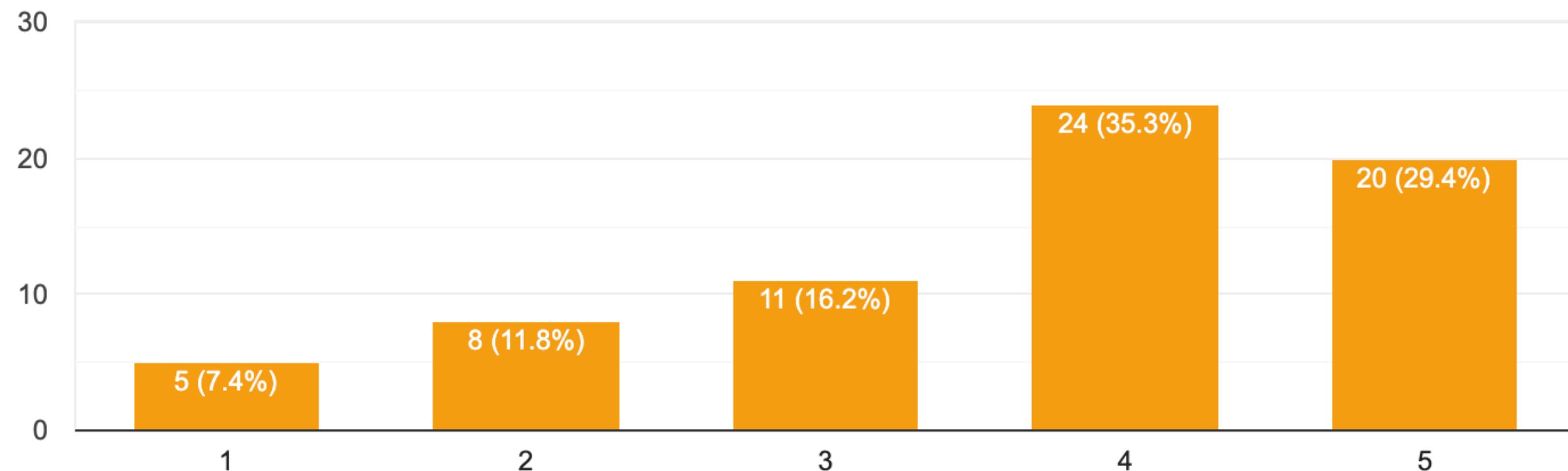


DATA COLLECTED

To what extent do you complete all the homework problems assigned for your courses?

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68 responses

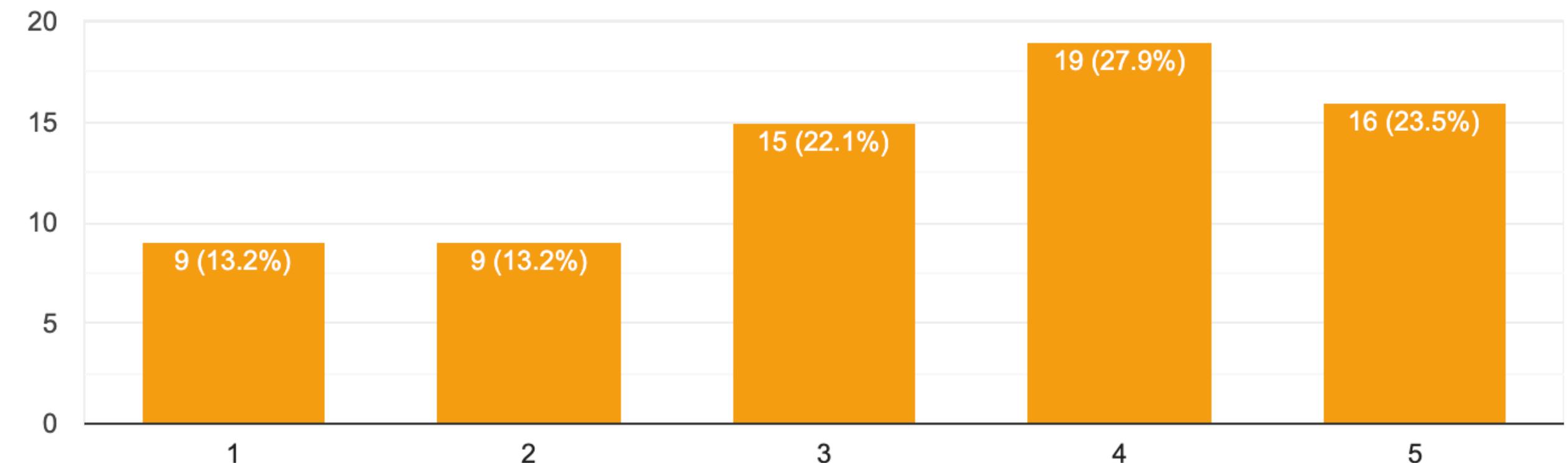


DATA COLLECTED

How often do you attend class sessions regularly without missing any days?

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68 responses

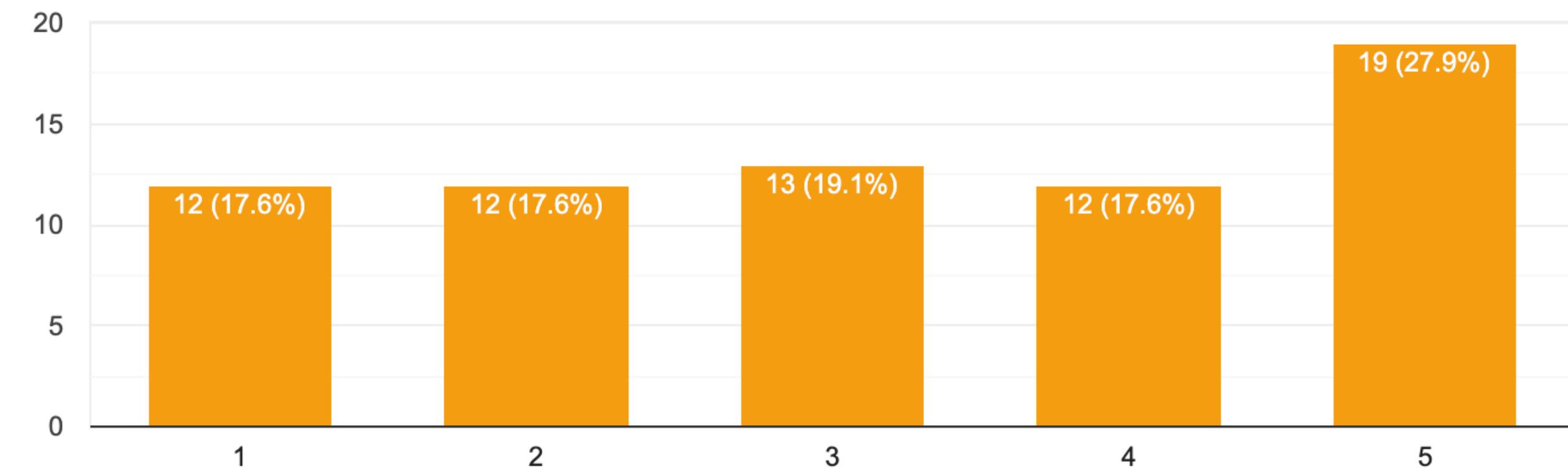


DATA COLLECTED

How consistently do you take comprehensive and organized notes during class lectures?

68 responses

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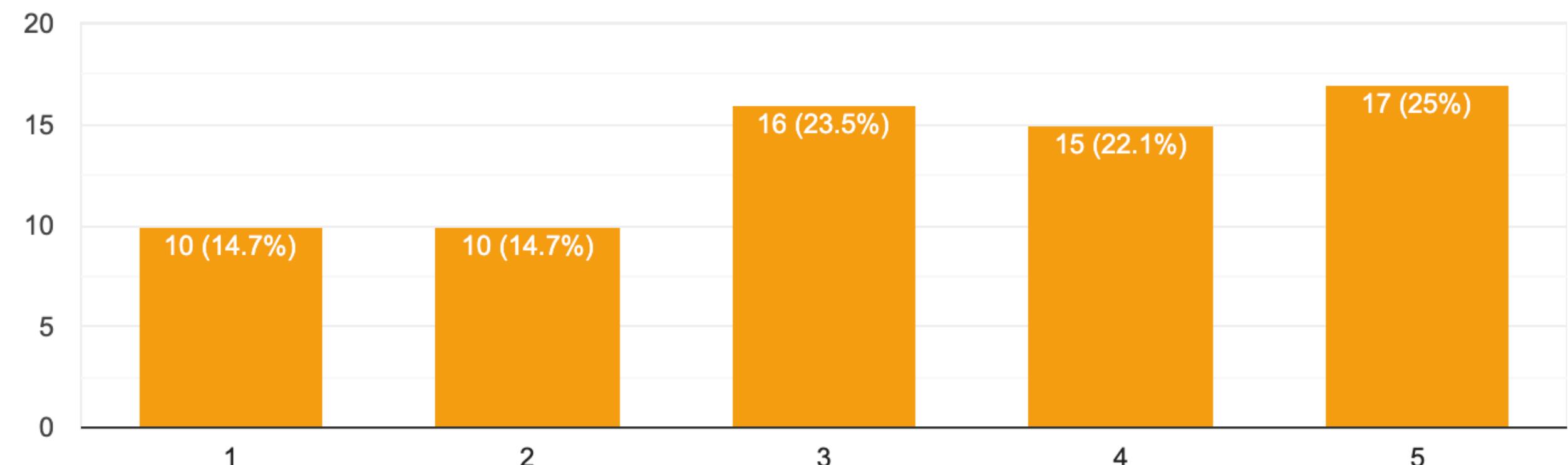


DATA COLLECTED

How frequently do you stay updated on the required readings for your courses?

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68 responses

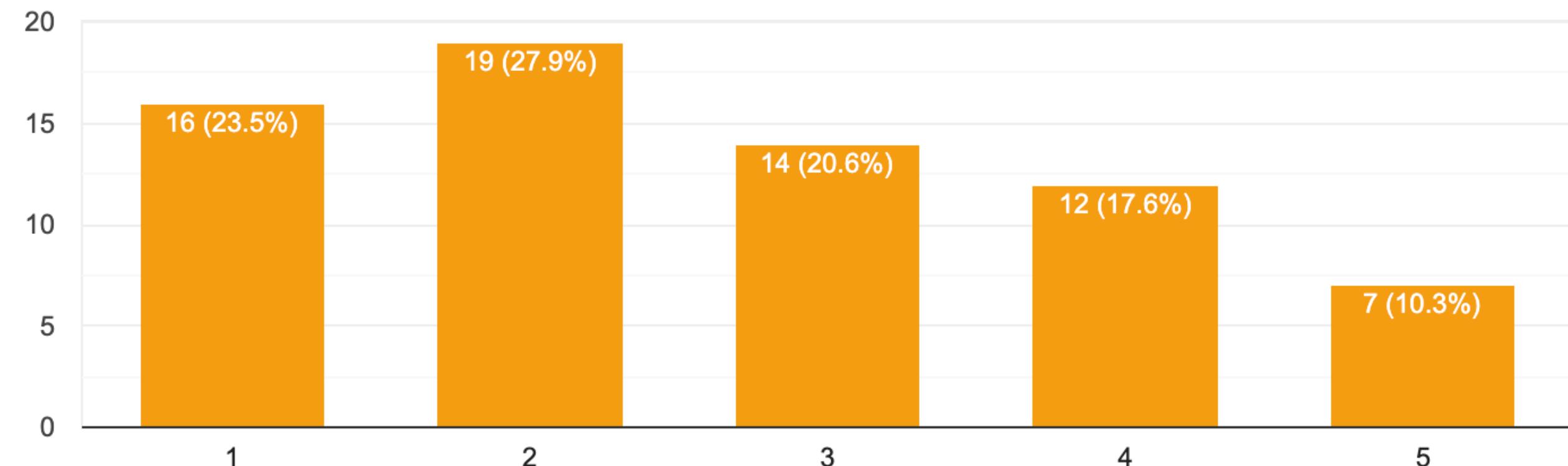


DATA COLLECTED

How often do you receive prompt written or oral feedback from faculty on your academic performance?

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68 responses

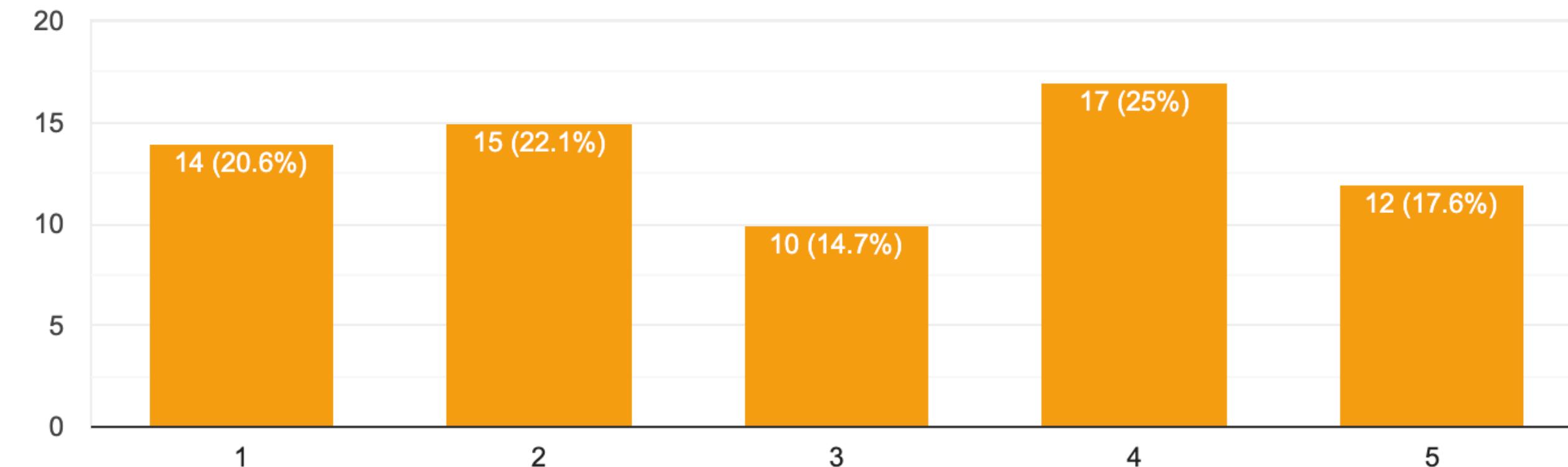


DATA COLLECTED

How often do you attend class without completing the required readings or assignments?

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68 responses

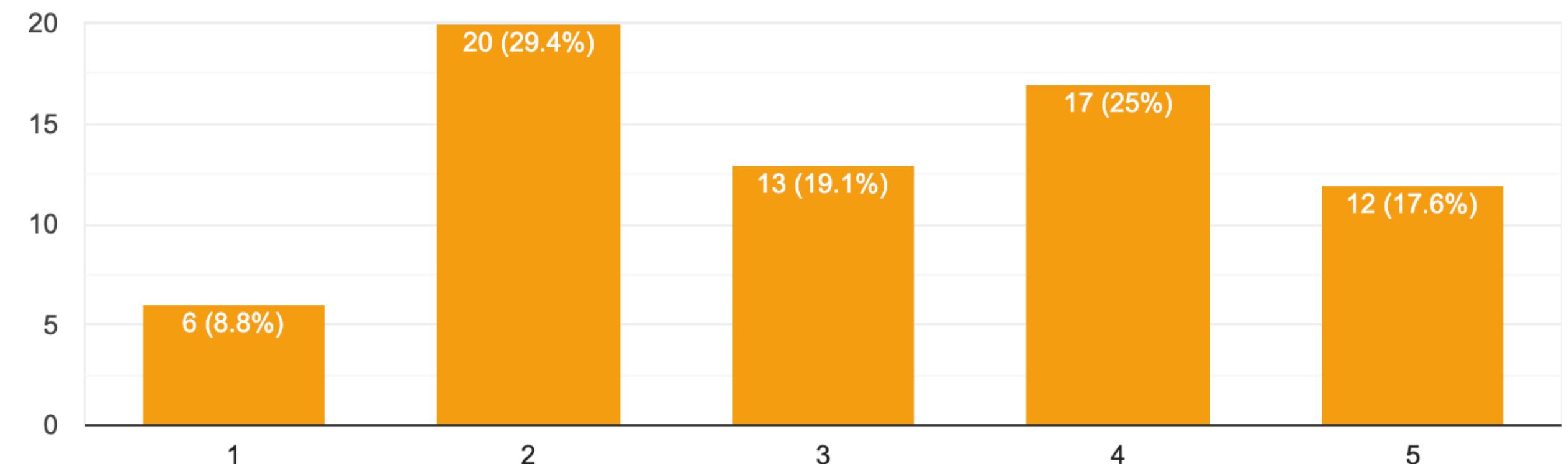


DATA COLLECTED

How often do you ensure to study on a regular basis?

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68 responses



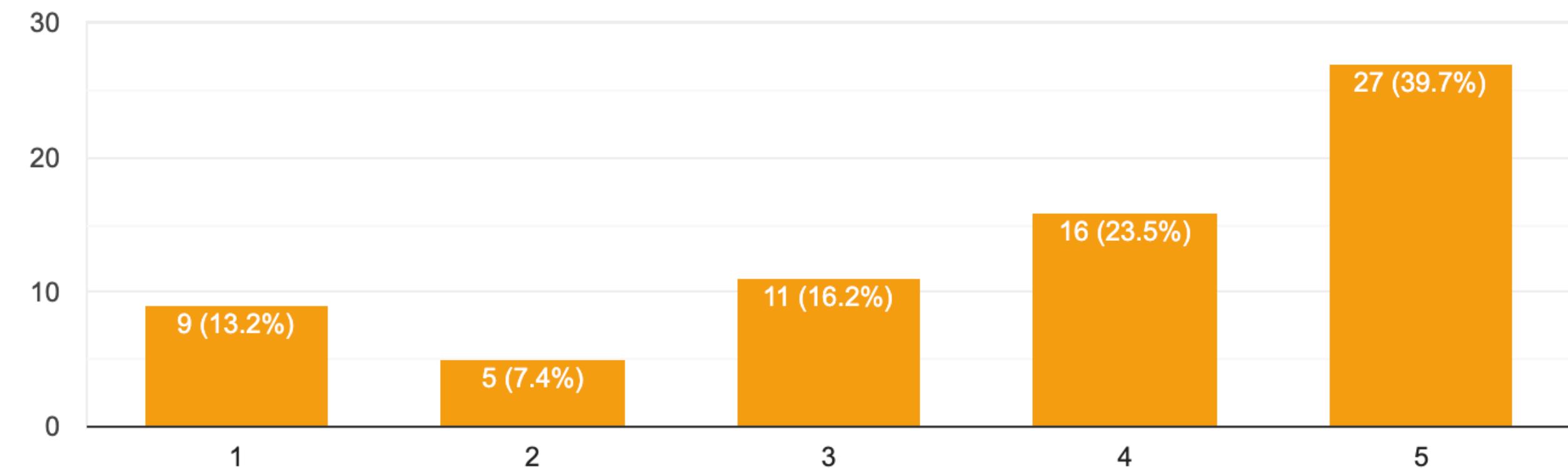
DATA COLLECTED

Cognitive Engagement

Have you ever made a class presentation?

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68 responses

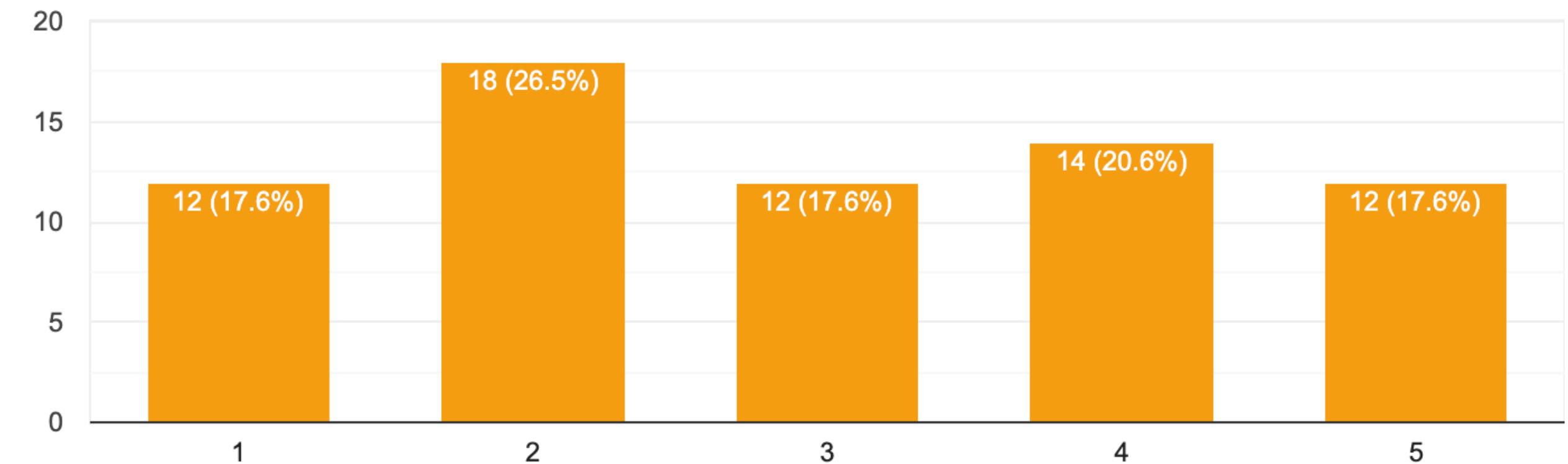


DATA COLLECTED

How often do you prepare two or more drafts of a paper or assignment before turning it in?

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68 responses

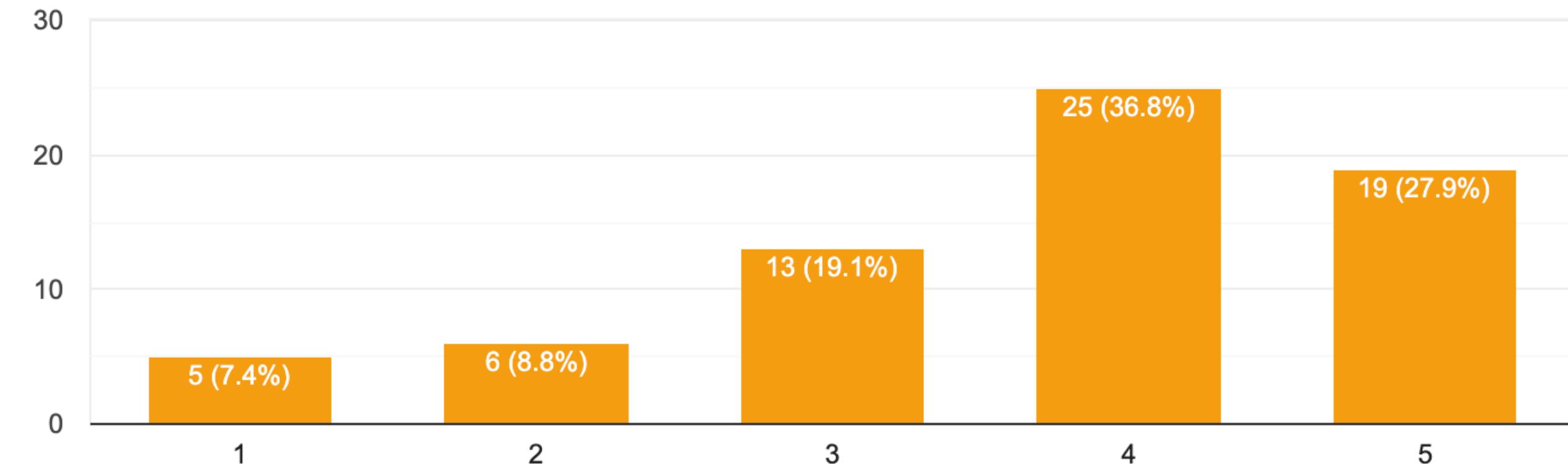


DATA COLLECTED

Have you worked on a paper or project that required integrating ideas or information from various sources?

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68 responses

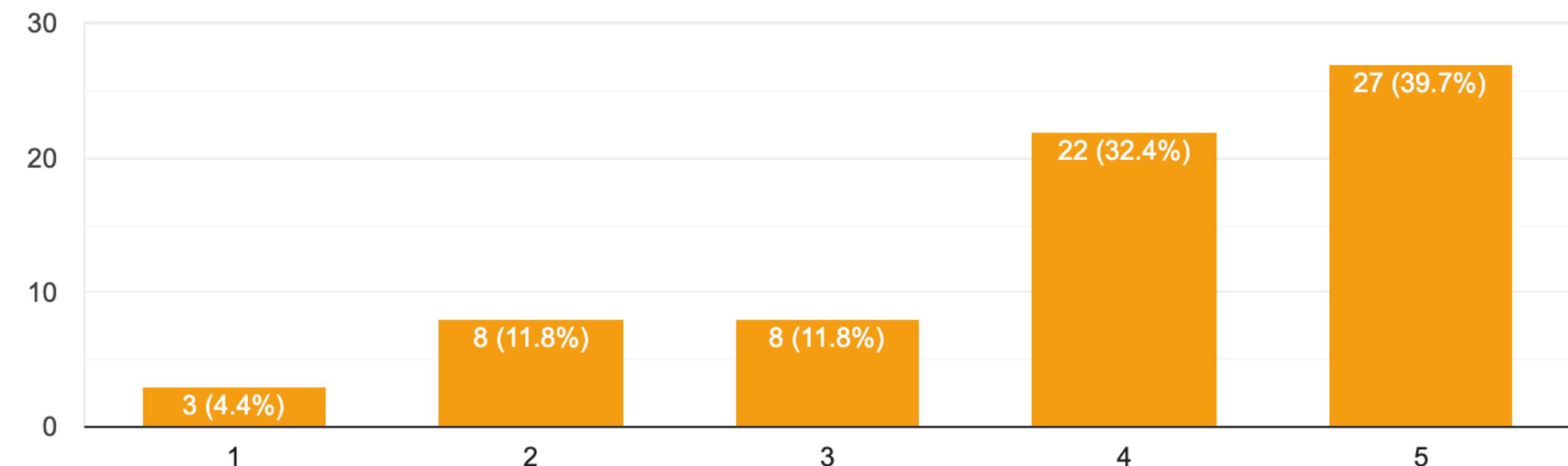


DATA COLLECTED

Have you used an electronic medium (Instagram, Whatsapp, E-mail, Internet, etc) to discuss or complete an assignment?

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68 responses

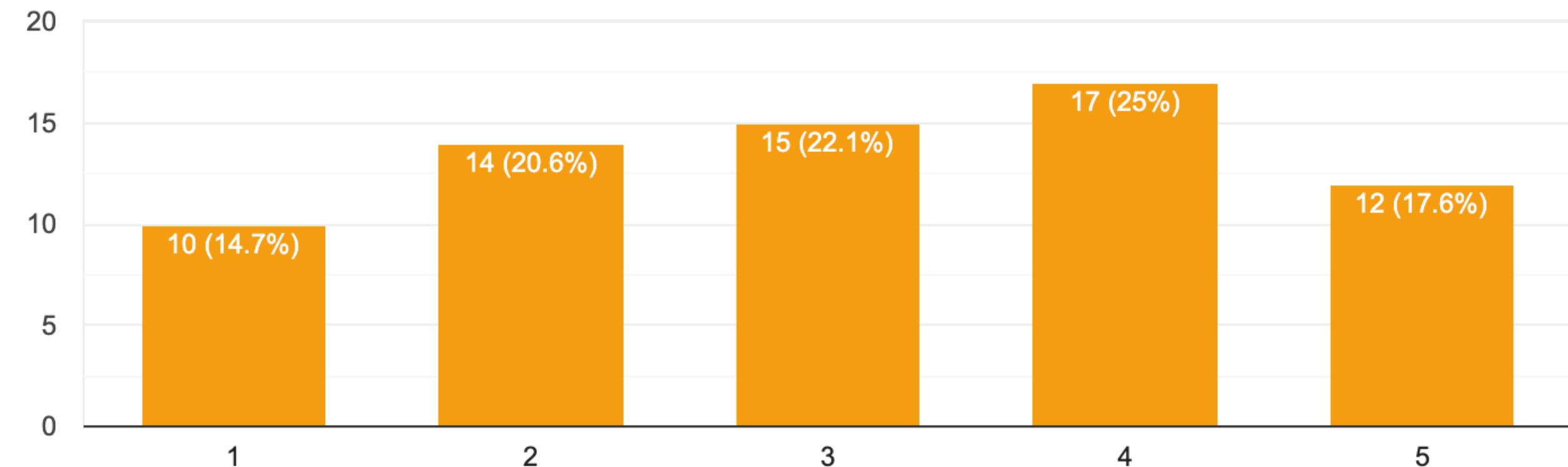


DATA COLLECTED

Have you discussed ideas from your readings or classes with faculty members outside of class?

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68 responses

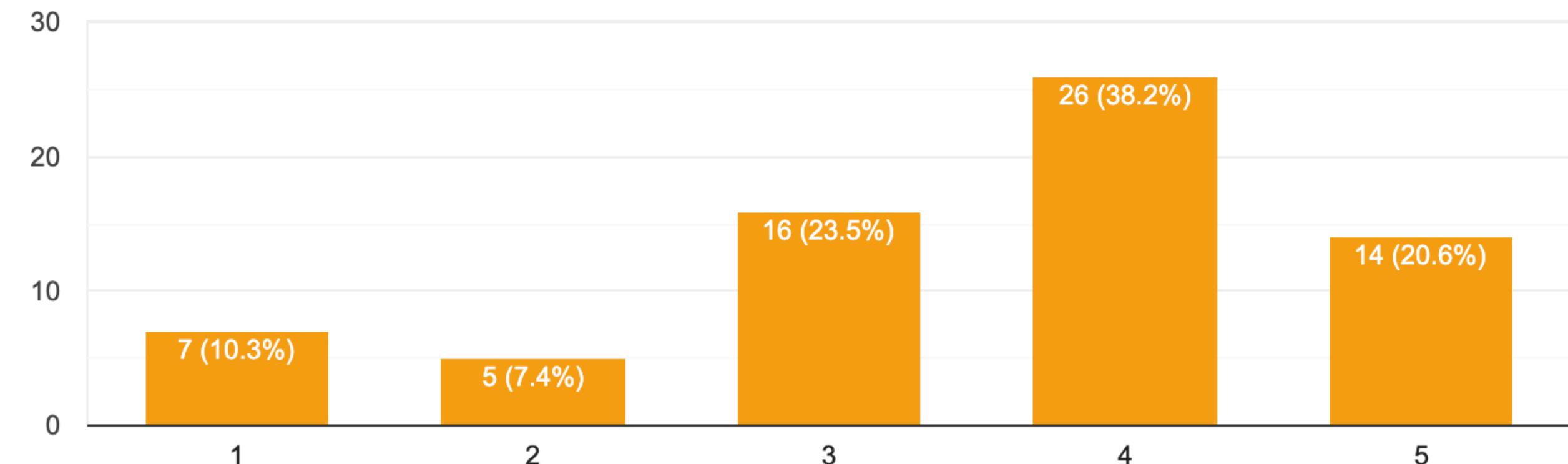


DATA COLLECTED

How much effort do you typically put forth in your academic endeavors?

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68 responses

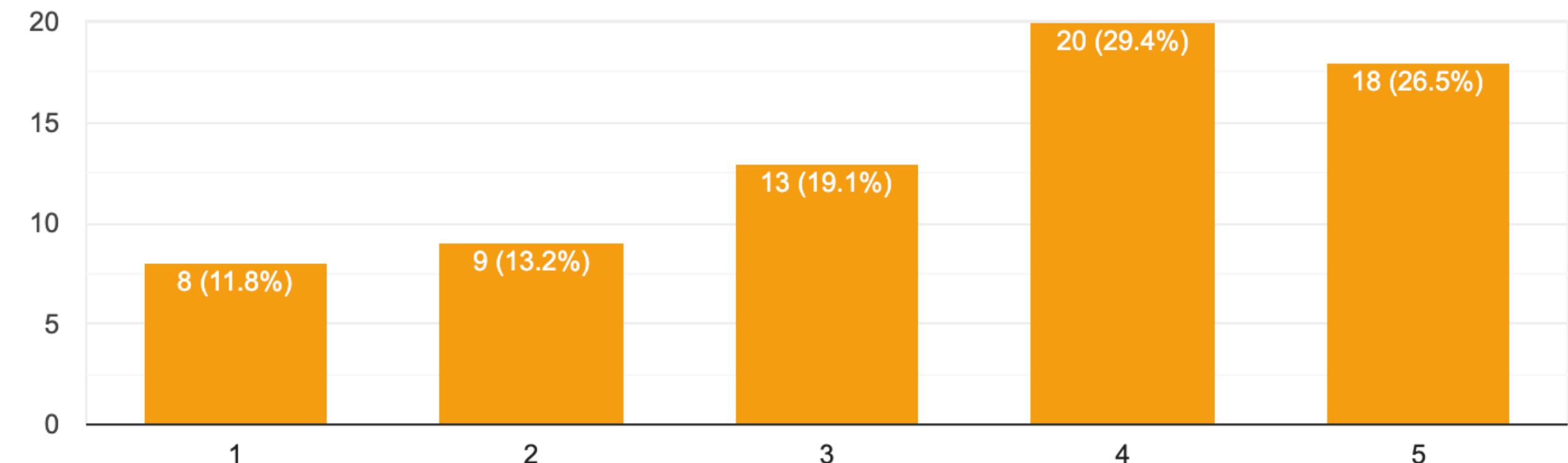


DATA COLLECTED

Have you used e-mail to communicate with an instructor?

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68 responses

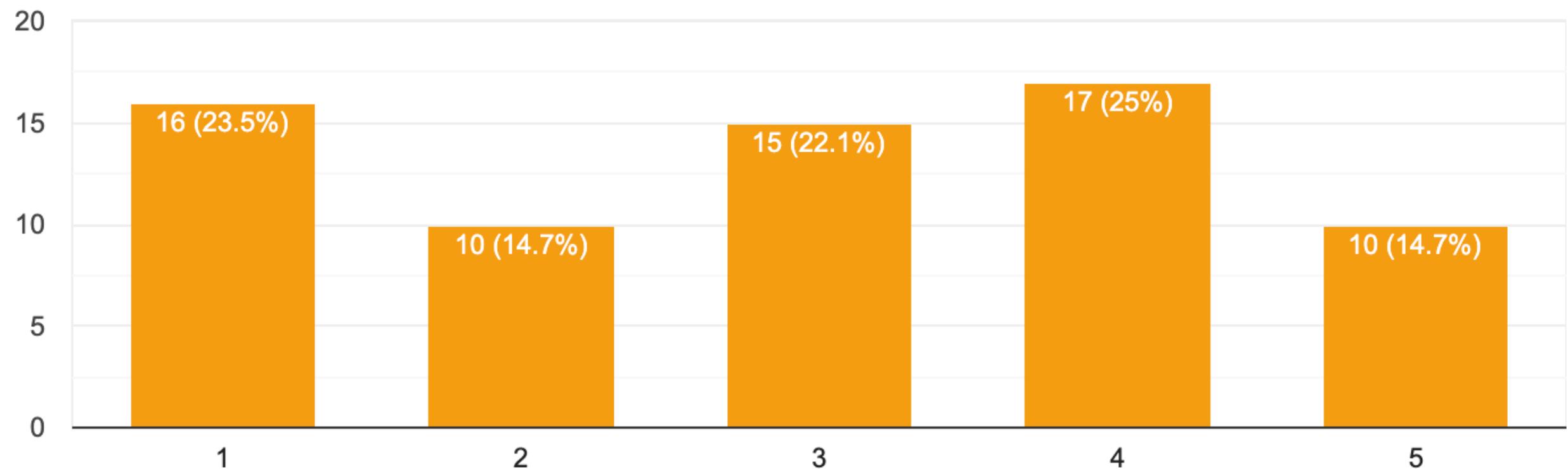


DATA COLLECTED

Have you discussed grades or assignments with an instructor?

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68 responses

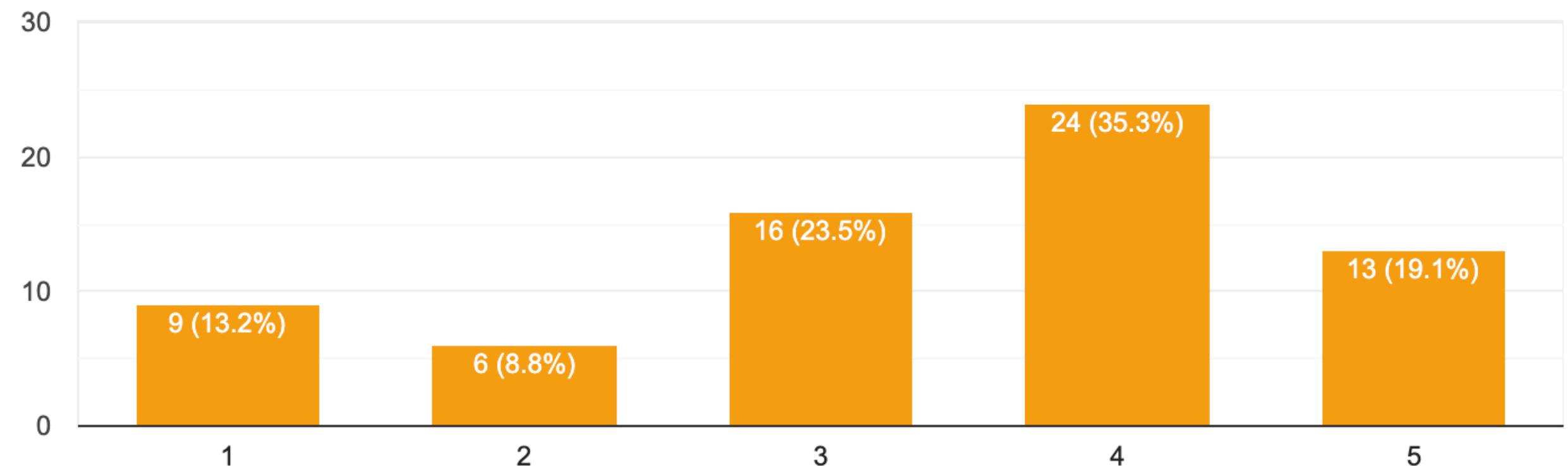


DATA COLLECTED

Have you ever worked harder than you thought you could to meet an instructor's standards or expectations?

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68 responses

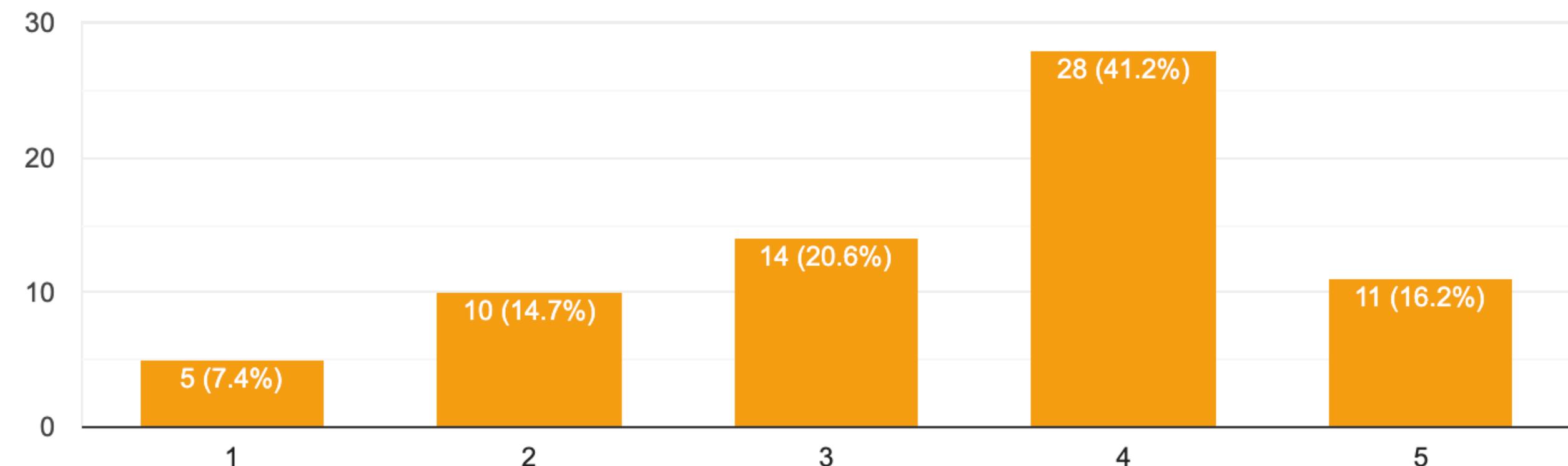


DATA COLLECTED

Have you discussed ideas from your readings or classes with others outside of class
(students, family members, co-workers, etc)?

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68 responses

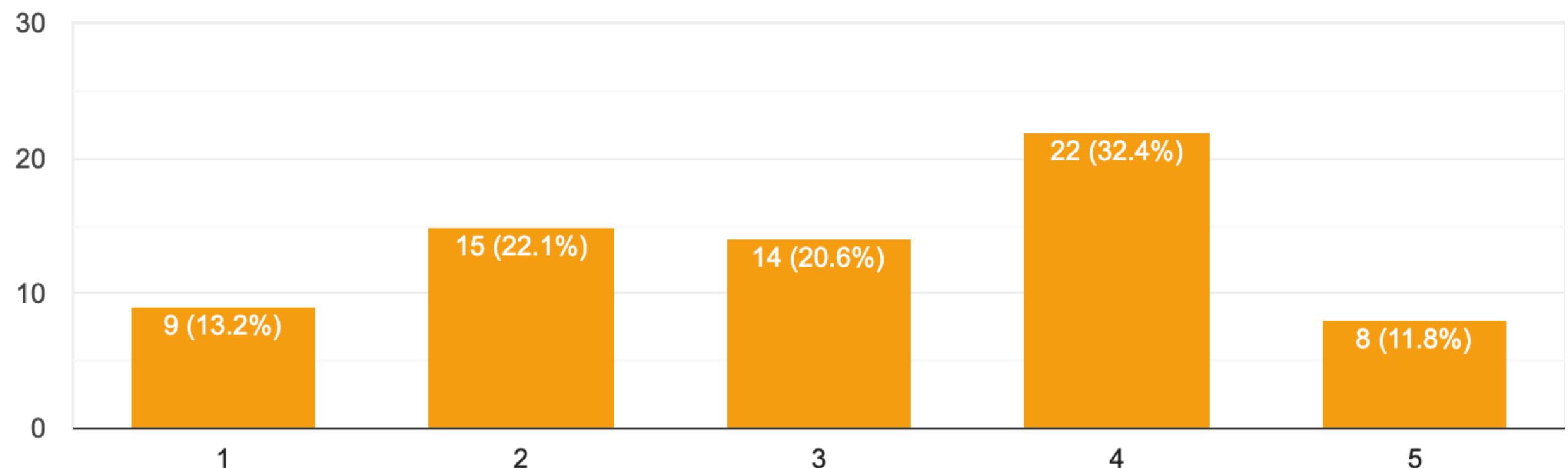


DATA COLLECTED

Have you gone to the professor's office to review assignments or tests, or to ask questions?

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68 responses

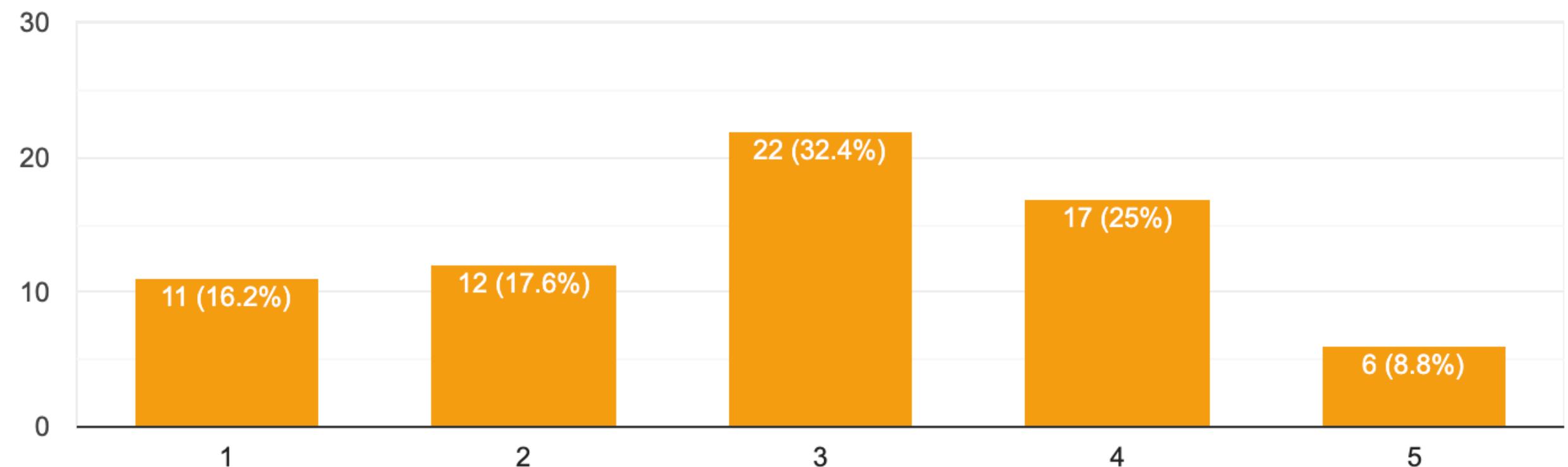


DATA COLLECTED

How often do you think about the course material between class meetings?

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68 responses

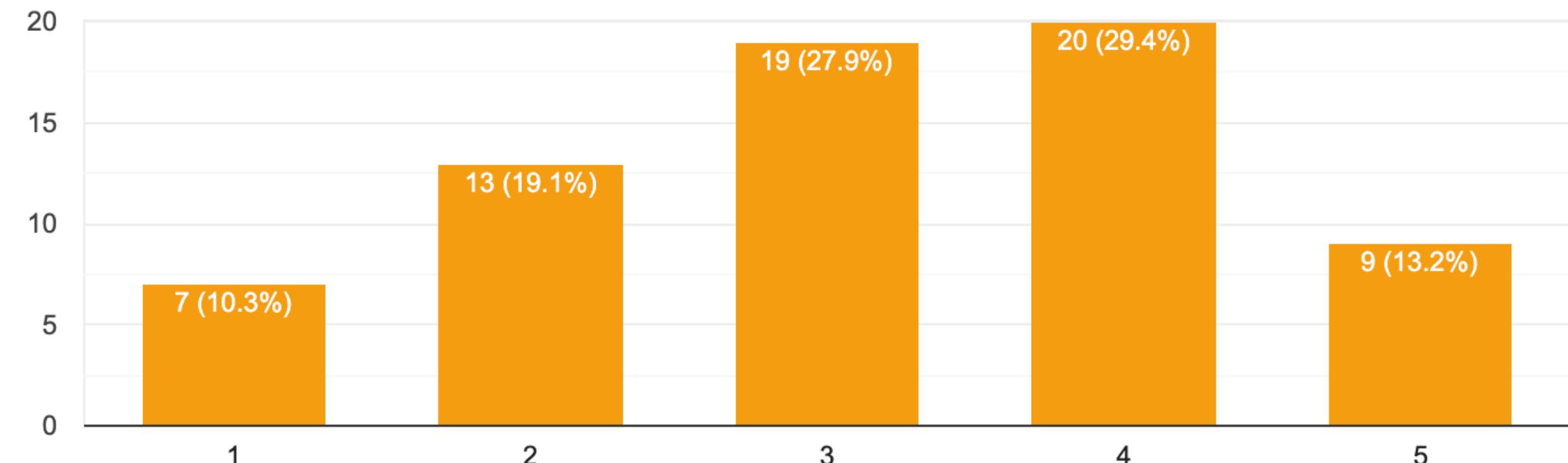


DATA COLLECTED

Have you found ways to make the course interesting for yourself?

 Copy

68 responses

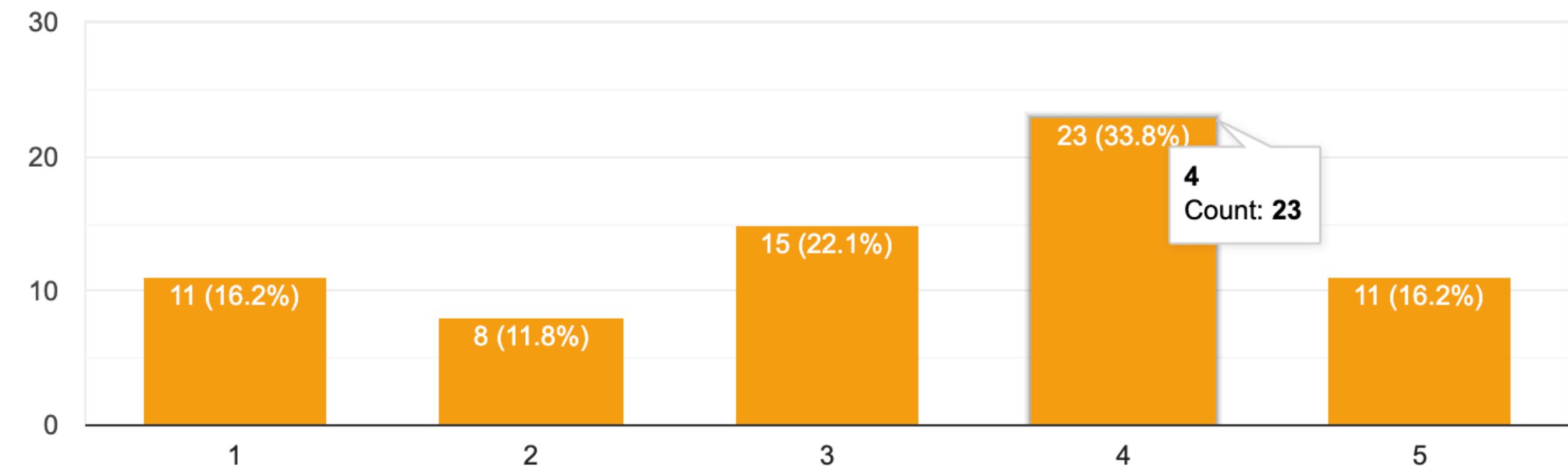


DATA COLLECTED

Do you look over class notes between classes to ensure understanding of the materials?

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68 responses

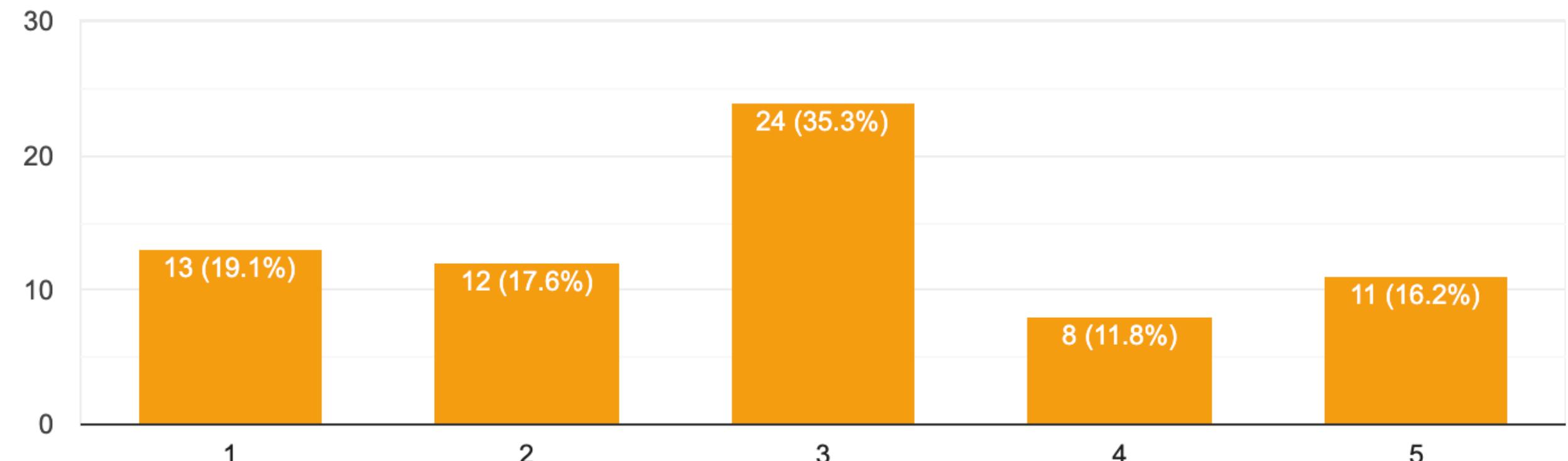


DATA COLLECTED

Have you applied course materials to your daily life?

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68 responses

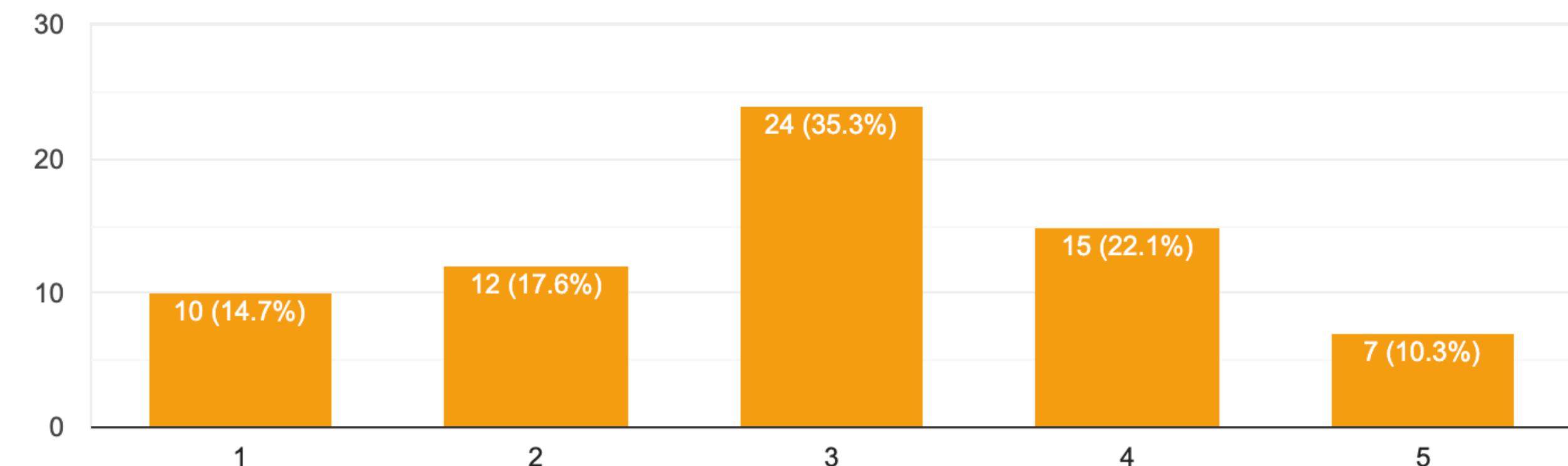


DATA COLLECTED

Have you found ways to make the course materials relevant to your daily life?

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68 responses



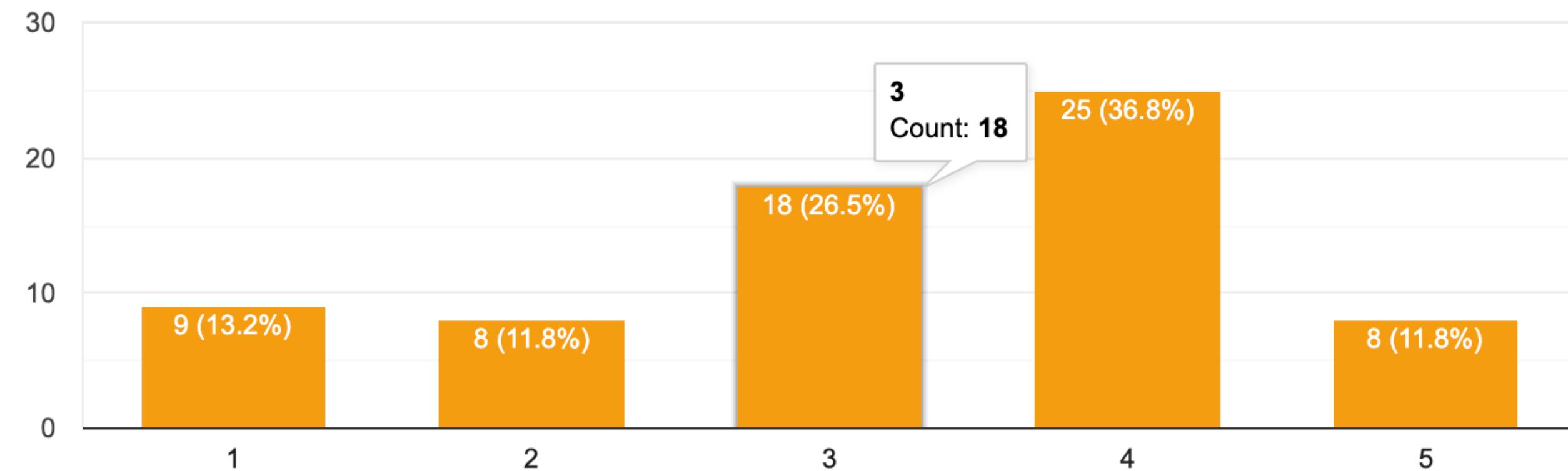
DATA COLLECTED

Emotional Engagement

Have you included diverse perspectives in class discussions or while writing assignments?

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68 responses

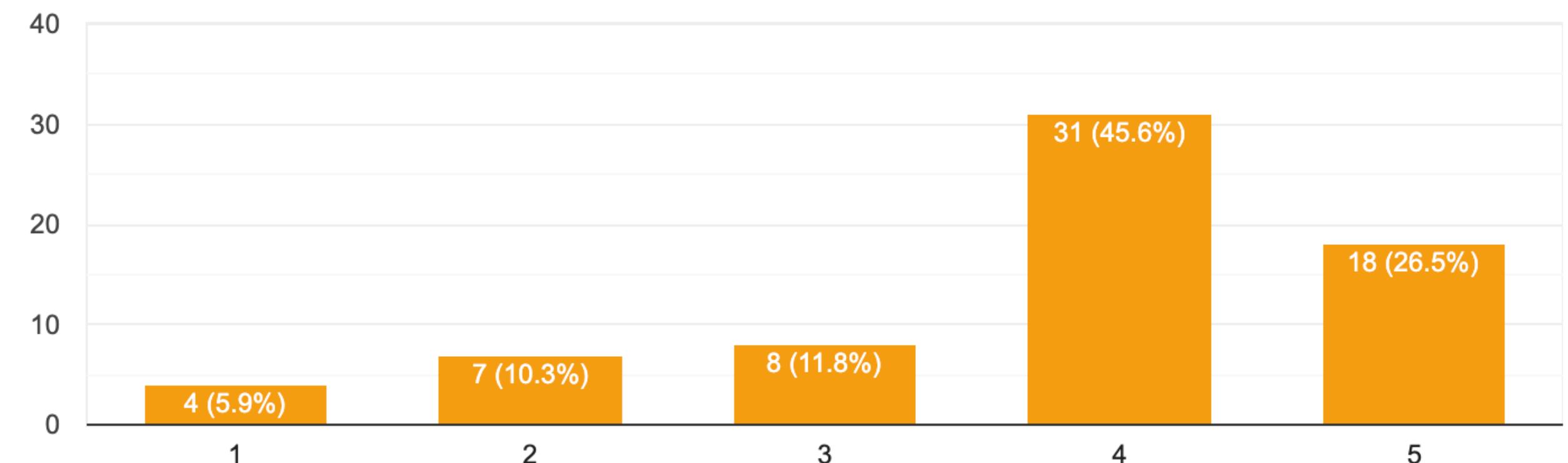


DATA COLLECTED

Have you worked with other students on projects during class?

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68 responses

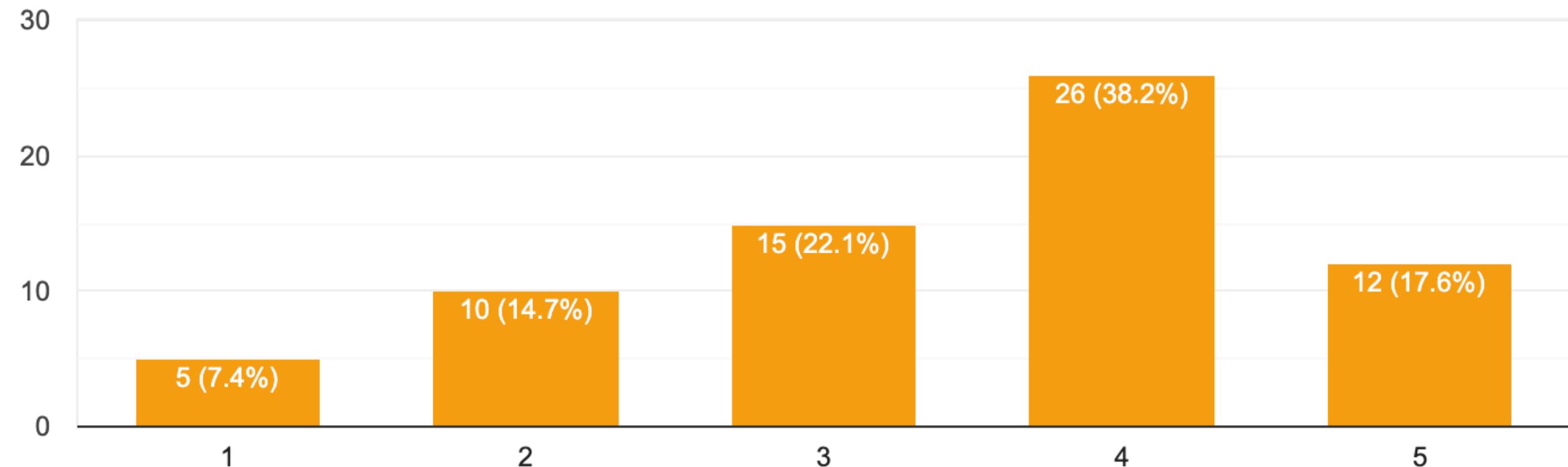


DATA COLLECTED

Have you worked with classmates outside your class to prepare class assignments?

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68 responses

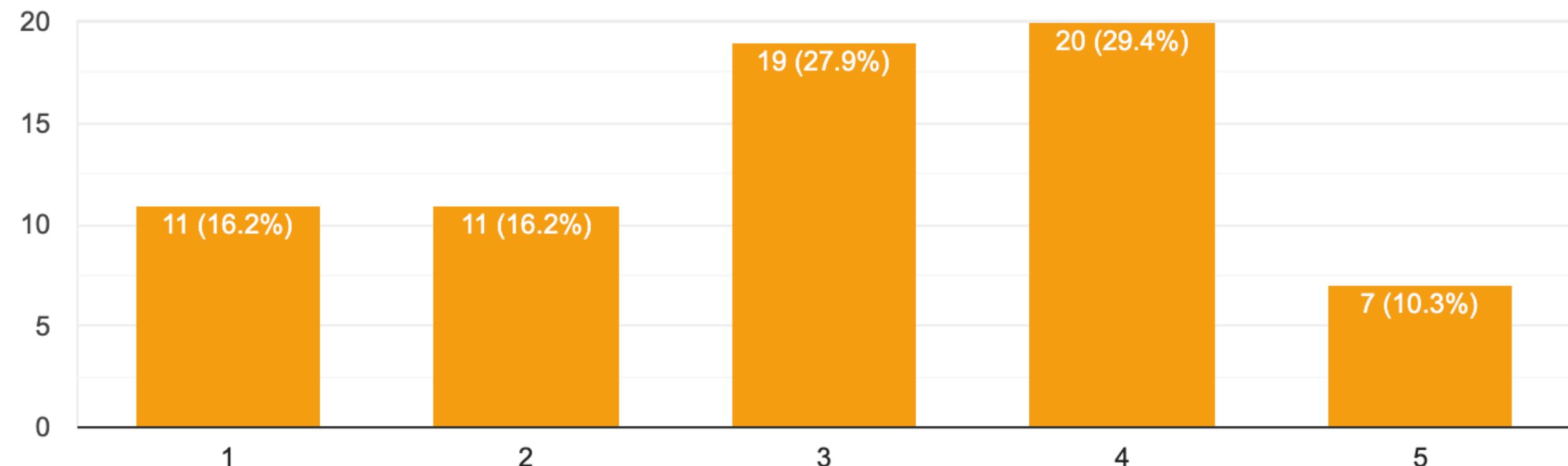


DATA COLLECTED

Have you worked with faculty members on activities other than course work?

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68 responses

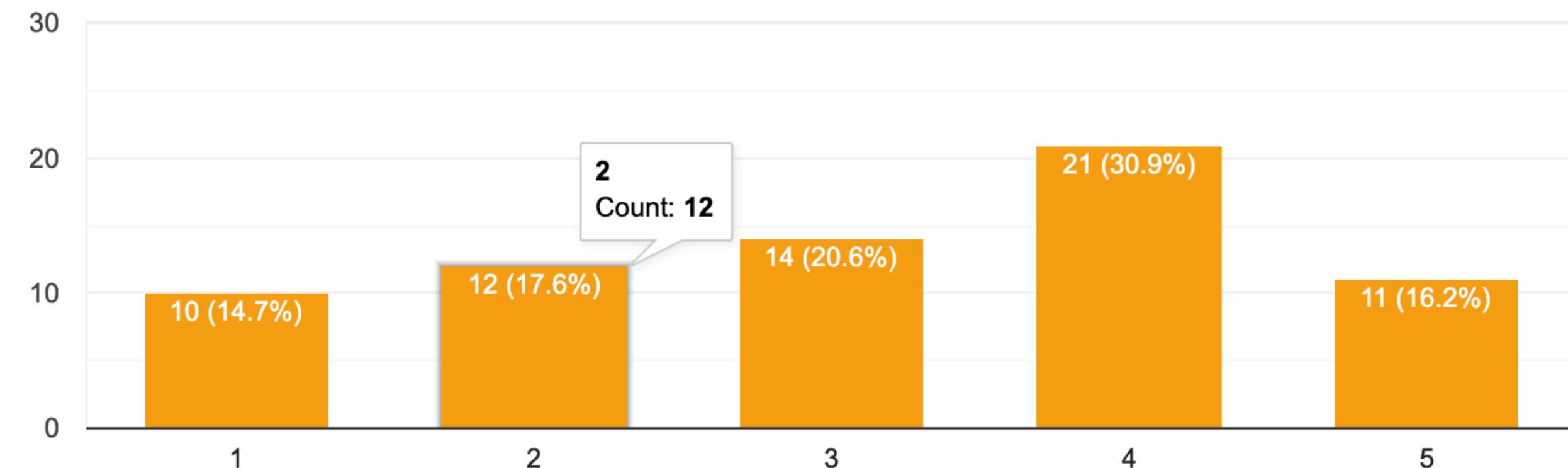


DATA COLLECTED

Have you talked about your career plans with a faculty member or adviser?

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68 responses



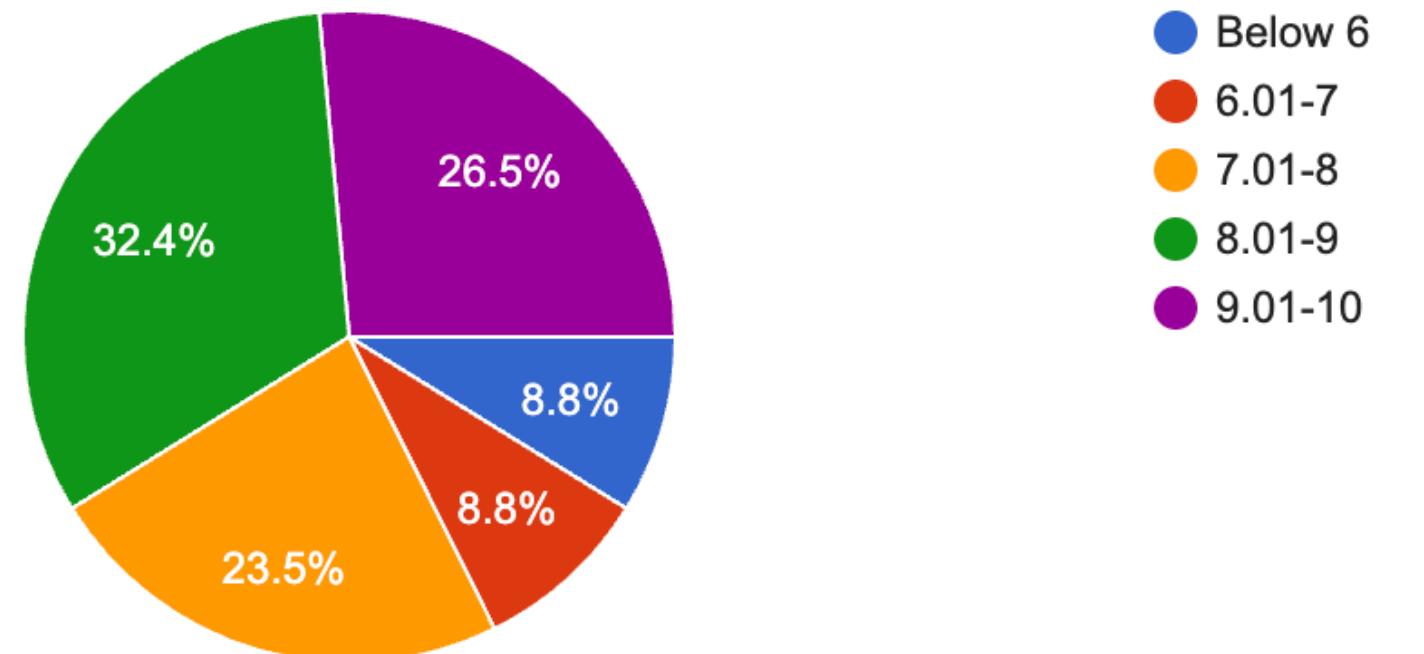
DATA COLLECTED

Academic Performance

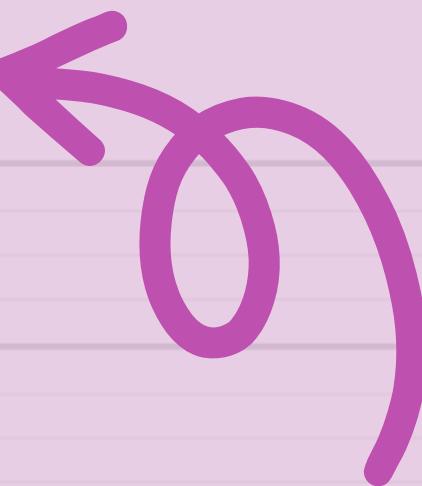
What is your current CGPA?

68 responses

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DATA ANALYSIS



I.D.	Gender	Age	Religion	Family Income	Academic Year	Intrinsic Motivation	Behavioral Engagement	Cognitive Engagement	Emotional Engagement	CGPA
1	Male	16 - 23 years	Sikhism	Under 5 lac per annum	3	1.00	1.00	1.56	2.03	1
2	Female	16 - 23 years	Hinduism	5-10 lac per annum	1	4.00	3.30	4.13	4.27	5
3	Female	16 - 23 years	Hinduism	more than 15 lac per annum	4	2.60	2.30	2.34	3.00	3
4	Female	16 - 23 years	Hinduism	5-10 lac per annum	4	2.60	2.30	2.66	3.09	3
5	Female	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.20	3.10	3.19	3.73	3
6	Female	16 - 23 years	Hinduism	Prefer not to say	4	2.80	2.50	3.00	3.27	3
7	Female	16 - 23 years	Hinduism	Prefer not to say	4	3.00	2.80	2.34	3.00	3
8	Male	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.60	4.40	4.13	3.31	4
9	Female	16 - 23 years	Hinduism	5-10 lac per annum	4	3.20	3.40	3.44	3.55	3
10	Male	16 - 23 years	Hinduism	Prefer not to say	1	4.00	3.80	4.19	4.18	5
11	Female	16 - 23 years	Sikhism	5-10 lac per annum	2	4.00	3.70	3.68	3.64	4
12	Female	16 - 23 years	Hinduism	Prefer not to say	4	3.40	3.00	3.25	3.27	3
13	Female	16 - 23 years	Islam	more than 15 lac per annum	4	3.20	2.30	3.31	3.27	3
14	Female	16 - 23 years	Non-religious	more than 15 lac per annum	4	3.20	3.10	3.31	2.27	3
15	Female	16 - 23 years	Christianity	more than 15 lac per annum	3	2.60	2.60	2.81	2.31	3
16	Female	16 - 23 years	Hinduism	more than 15 lac per annum	4	2.80	2.80	2.75	3.09	3
17	Male	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.20	3.00	3.38	3.64	3
18	Male	16 - 23 years	Hinduism	Prefer not to say	4	2.60	2.20	3.50	3.27	3
19	Male	16 - 23 years	Hinduism	10-15 lac per annum	4	3.80	3.30	3.56	3.36	4
20	Male	16 - 23 years	Hinduism	Prefer not to say	4	2.80	3.10	3.44	3.55	4
21	Female	16 - 23 years	Hinduism	Prefer not to say	4	3.20	3.30	3.63	3.82	4
22	Female	16 - 23 years	Hinduism	5-10 lac per annum	4	3.80	3.70	4.31	4.27	5
23	Female	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.60	3.60	3.88	3.64	4
24	Male	16 - 23 years	Sikhism	5-10 lac per annum	2	3.40	3.10	3.25	2.31	3
25	Male	16 - 23 years	Hinduism	Prefer not to say	3	3.20	3.10	3.13	3.55	4
26	Male	16 - 23 years	Hinduism	more than 15 lac per annum	1	3.60	3.60	3.81	3.73	4
27	Female	16 - 23 years	Hinduism	10-15 lac per annum	3	3.00	3.00	3.00	3.00	3
28	Female	16 - 23 years	Sikhism	more than 15 lac per annum	3	3.60	3.00	3.13	3.27	3
29	Male	16 - 23 years	Hinduism	10-15 lac per annum	4	2.20	1.70	2.34	2.82	3
30	Male	16 - 23 years	Sikhism	5-10 lac per annum	4	3.00	2.70	3.44	3.45	3
31	Male	23 - 26 years	Hinduism	more than 15 lac per annum	5	2.80	2.70	3.31	3.18	3
32	Female	16 - 23 years	Hinduism	10-15 lac per annum	4	3.80	4.10	3.63	3.82	4
33	Female	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.40	4.10	3.31	3.18	3
34	Female	16 - 23 years	Sikhism	10-15 lac per annum	4	3.60	4.20	4.13	3.73	4
35	Female	16 - 23 years	Hinduism	Prefer not to say	4	3.20	3.70	3.19	2.31	2
36	Female	16 - 23 years	Hinduism	5-10 lac per annum	4	3.40	3.20	3.31	3.18	3
37	Female	16 - 23 years	Hinduism	10-15 lac per annum	4	2.00	2.60	3.13	3.55	3
38	Female	16 - 23 years	Hinduism	more than 15 lac per annum	3	1.60	1.70	1.63	2.00	2
39	Male	16 - 23 years	Christianity	more than 15 lac per annum	2	4.00	4.20	4.25	4.36	5
40	Male	16 - 23 years	Hinduism	more than 15 lac per annum	4	3.40	2.70	3.34	3.36	3
41	Female	16 - 23 years	Christianity	Prefer not to say	1	1.20	1.00	1.19	1.73	1
42	Male	23 - 26 years	Sikhism	10-15 lac per annum	5	2.60	3.60	2.34	2.82	4
43	Female	23 - 26 years	Jainism	more than 15 lac per annum	5	3.20	3.10	3.19	3.09	4
44	Male	16 - 23 years	Islam	more than 15 lac per annum	1	3.40	3.20	2.38	2.82	3
45	Male	16 - 23 years	Hinduism	Under 5 lac per annum	1	3.20	3.60	3.50	2.82	4
46	Male	16 - 23 years	Christianity	Under 5 lac per annum	2	3.00	3.00	3.56	3.45	3
47	Male	23 - 26 years	Non-religious	5-10 lac per annum	5	2.40	3.00	2.25	1.31	2
48	Male	16 - 23 years	Sikhism	5-10 lac per annum	1	3.20	3.30	3.25	3.82	3
49	Male	23 - 26 years	Sikhism	10-15 lac per annum	5	2.00	2.10	2.00	2.00	2
50	Male	16 - 23 years	Sikhism	5-10 lac per annum	1	3.00	3.50	3.56	3.55	4
51	Male	23 - 26 years	Hinduism	10-15 lac per annum	4	2.80	2.50	3.31	3.00	3
52	Male	16 - 23 years	Hinduism	10-15 lac per annum	3	3.40	2.80	3.13	3.36	3
53	Male	16 - 23 years	Jainism	5-10 lac per annum	3	1.60	1.50	1.50	1.36	1
54	Male	16 - 23 years	Hinduism	Prefer not to say	4	1.60	1.50	1.63	1.55	1
55	Female	16 - 23 years	Sikhism	5-10 lac per annum	4	1.40	1.60	1.63	1.73	2
56	Male	16 - 23 years	Buddhism	5-10 lac per annum	3	1.60	1.50	1.63	1.73	2
57	Male	16 - 23 years	Jainism	Under 5 lac per annum	3	4.00	4.10	4.44	4.36	5
58	Male	16 - 23 years	Non-religious	10-15 lac per annum	4	2.40	2.10	2.34	3.16	3
59	Female	23 - 26 years	Christianity	10-15 lac per annum	4	3.80	4.30	4.31	4.27	5
60	Female	16 - 23 years	Sikhism	5-10 lac per annum	2	3.80	4.10	4.25	4.16	5
61	Female	16 - 23 years	Hinduism	more than 15 lac per annum	2	3.80	3.80	3.88	4.19	4
62	Male	16 - 23 years	Hinduism	more than 15 lac per annum	1	4.00	4.00	4.00	4.03	5
63	Male	16 - 23 years	Hinduism	more than 15 lac per annum	3	4.00	3.90	4.13	4.36	5
64	Male	16 - 23 years	Buddhism	more than 15 lac per annum	3	2.60	2.50	2.50	2.55	2



DATA ANALYSIS



CORRELATION

	Academic Year	Intrinsic Motivation	BEHAVIORAL ENGAGEMENT	COGNITIVE ENGAGEMENT	EMOTIONAL ENGAGEMENT	CGPA
Academic Year	1					
Intrinsic Motivation	-0.231273855	1				
BEHAVIORAL ENGAGEMENT	-0.140193829	0.896535868	1			
COGNITIVE ENGAGEMENT	-0.131592965	0.900081554	0.851798847	1		
EMOTIONAL ENGAGEMENT	-0.211661411	0.846202235	0.786672935	0.92723765	1	
CGPA	-0.230678775	0.832350483	0.822647706	0.892600413	0.879771711	1



DATA ANALYSIS



ANOVA – GENDER AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
GENDER	0.103	1	0.103	0.0925	0.762
Residuals	68.835	62	1.110		

ANOVA – AGE AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
AGE	1.57e-4	1	1.57e-4	1.41e-4	0.991
Residuals	68.9	62	1.11		



DATA ANALYSIS



ANOVA – RELIGION AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
RELIGION	5.66	6	0.943	0.849	0.538
Residuals	63.28	57	1.110		

ANOVA – FAMILY INCOME AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
FAMILY INCOME	1.78	4	0.445	0.391	0.814
Residuals	67.16	59	1.138		



DATA ANALYSIS



ANOVA – ACADEMIC YEAR AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
ACADEMIC YEAR	8.25	4	2.06	2.00	0.106
Residuals	60.69	59	1.03		

ANOVA – INTRINSIC MOTIVATION AND CGPA

ANOVA - CGPA

	Sum of Squares	df	Mean Square	F	p
INTRINSIC MOTIVATION	56.3	15	3.755	14.3	< .001
Residuals	12.6	48	0.263		



DATA ANALYSIS



ANOVA – ENGAGEMENT AND INTRINSIC MOTIVATION, ACADEMIC YEAR

ANOVA

ANOVA - BEHAVIORAL

	Sum of Squares	df	Mean Square	F	p
INTRINSIC MOTIVATION	36.55	15	2.437	16.7	< .001
Residuals	7.00	48	0.146		

[3]

ANOVA

ANOVA - BEHAVIORAL

	Sum of Squares	df	Mean Square	F	p
ACADEMIC YEAR	5.46	4	1.364	2.11	0.090
Residuals	38.09	59	0.646		

[3]

ANOVA

ANOVA - COGNITIVE

	Sum of Squares	df	Mean Square	F	p
INTRINSIC MOTIVATION	33.17	15	2.211	20.9	< .001
Residuals	5.08	48	0.106		

[3]

ANOVA

ANOVA - COGNITIVE

	Sum of Squares	df	Mean Square	F	p
ACADEMIC YEAR	6.72	4	1.681	3.15	0.021
Residuals	31.52	59	0.534		

[3]

ANOVA

ANOVA - EMOTIONAL

	Sum of Squares	df	Mean Square	F	p
INTRINSIC MOTIVATION	28.86	15	1.924	13.4	< .001
Residuals	6.89	48	0.143		

[3]

ANOVA

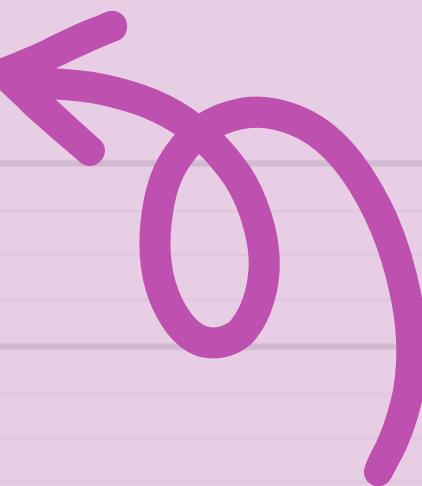
ANOVA - EMOTIONAL

	Sum of Squares	df	Mean Square	F	p
ACADEMIC YEAR	5.81	4	1.452	2.86	0.031
Residuals	29.94	59	0.507		

[3]



DATA ANALYSIS

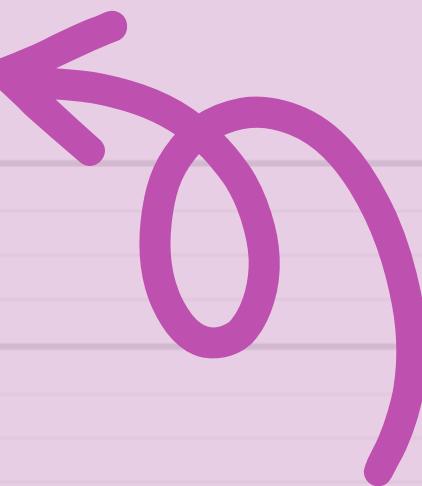


MODERATING EFFECT

SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.911614309								
R Square	0.831040648								
Adjusted R Square	0.768738319								
Standard Error	0.444316945								
Observations	64								
ANOVA									
	df	SS	MS	F	Significance F				
Regression	7	57.28986468	8.184266383	72.54910385	9.31649E-26				
Residual	59	11.64763532	0.197417548						
Total	66	68.9375							
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept	-0.759999197	0.249103277	-3.050940181	0.003415517	-1.258453703	-0.261544691	-1.258453703	-0.261544691	
Intrinsic Motivation	-0.059914398	0.208218705	-0.287747431	0.774548423	-0.476559064	0.356730269	-0.476559064	0.356730269	
BEHAVIORAL ENGAGEMENT	0.316954599	0.156641417	2.023440571	0.047565224	0.003515847	0.630393351	0.003515847	0.630393351	
COGNITIVE ENGAGEMENT	0	0	65535	#NUM!	0	0	0	0	
EMOTIONAL ENGAGEMENT	0.52862792	0.199307605	2.652321874	#NUM!	0.129814324	0.927441516	0.129814324	0.927441516	
Interaction term (behavioral)	0	0	65535	#NUM!	0	0	0	0	
Interaction term (cognitive)	0.488332738	0.240730517	2.028545212	#NUM!	0.006632086	0.970033389	0.006632086	0.970033389	
Interaction term (emotional)	0	0	65535	#NUM!	0	0	0	0	



DATA ANALYSIS



REGRESSION

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.915388761							
R Square	0.837936584							
Adjusted R Square	0.8239656							
Standard Error	0.438890583							
Observations	64							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	5	57.76525325	11.55305065	59.97691893	1.16759E-21			
Residual	58	11.17224675	0.192624944					
Total	63	68.9375						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.407358114	0.333068035	-1.22304776	0.226257878	-1.074066224	0.259349995	-1.074066224	0.259349995
Academic Year	-0.078985131	0.050277913	-1.570970762	0.121629322	-0.179627307	0.021657046	-0.179627307	0.021657046
Intrinsic Motivation	-0.149105457	0.213367907	-0.698818577	0.487458252	-0.576207728	0.277996813	-0.576207728	0.277996813
BEHAVIORAL ENGAGEMENT	0.342913165	0.155608201	2.203695967	0.031529635	0.031429508	0.654396821	0.031429508	0.654396821
COGNITIVE ENGAGEMENT	0.59075936	0.24656706	2.395937882	0.019824552	0.097201765	1.084316956	0.097201765	1.084316956
EMOTIONAL ENGAGEMENT	0.457063609	0.202075132	2.261849864	0.027470431	0.052566285	0.861560933	0.052566285	0.861560933



INFERENCE



- **Correlation Insights:** The correlation analysis revealed a strong positive correlation between student engagement and CGPA, suggesting that higher levels of engagement are associated with better academic outcomes. Furthermore, intrinsic motivation displayed a positive correlation with CGPA, implying that lower intrinsic motivation may be linked to lower academic achievement.
- **ANOVA with Demographic Variables:** Additionally, the ANOVA results with demographic variables (gender, age, religion, family income, academic year) indicated that none of these factors significantly influenced CGPA, with p-values greater than 0.05. However, intrinsic motivation emerged as a significant predictor ($p < 0.05$), highlighting its importance in determining academic success.
- **ANOVA with Intrinsic Motivation and Academic Year:** The ANOVA results also showed that the Intrinsic Motivation (<0.05) significantly influences Behavioral Engagement as compared to Academic Year (>0.05), both Intrinsic Motivation and Academic Year significantly affects Cognitive Engagement and Emotional Engagement.
- **Moderating Effect:** The interaction term between student engagement and intrinsic motivation does not influence CGPA, it suggests that there is no significant moderating effect of intrinsic motivation on the relationship between student engagement and academic performance (CGPA).

INFERENCE



Regression Analysis:

- **Multiple R:** The multiple correlation coefficient (R) of 0.915 suggests a strong positive correlation between the predictor variables (college year, intrinsic motivation, behavioral engagement, cognitive engagement, emotional engagement) collectively and the dependent variable (CGPA).
- **R Square:** Approximately 83.8% of the variance in CGPA can be explained by the predictor variables, indicating a good fit of the model.
- **Adjusted R Square:** The adjusted R^2 of 0.824, although slightly lower than R^2 , still indicates a good fit of the model, considering the number of predictors.
- **Standard Error:** The standard error of 0.439 suggests that the average distance between observed values and the regression line is relatively small.
- **Coefficients:** Behavioral engagement, cognitive engagement, and emotional engagement have statistically significant coefficients ($p < 0.05$), indicating their significant impact on CGPA. However, college year and intrinsic motivation do not have statistically significant effects on CGPA in this model.

CONCLUSION



- The null hypothesis positing no effect of student engagement on CGPA was tested. The results reject this hypothesis, indicating a significant relationship between student engagement and academic performance, particularly concerning behavioral, cognitive, and emotional engagement dimensions.
- In essence, these findings underscore the paramount importance of fostering student engagement, particularly in behavioral, cognitive, and emotional domains, to bolster academic achievement. Understanding the nuanced interplay between student engagement, and academic performance is pivotal for devising targeted interventions and support mechanisms aimed at enhancing student success. By harnessing these insights, educational institutions can tailor their strategies to nurture holistic student development, thereby fostering a conducive environment for academic excellence and growth.

