

# PERCEIVED VALUE OF A.I. IN HIGHER EDUCATION

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## **ABSTRACT**

ARTIFICIAL INTELLIGENCE HAS BEEN IMPLEMENTED INTO BUSINESSES OF MANY DIFFERENT VARIETIES INCREASING EFFICIENCY RATINGS. IT HAS ALSO BEEN ADDED TO SOME UNIVERSITIES TO AID WITH ADMISSIONS, WEBSITE NAVIGATION, OR STUDENT AID. WHY HAVE MANY MORE UNIVERSITIES NOT IMPLEMENTED ARTIFICIAL INTELLIGENCE INTO THEIR SYSTEMS YET? ONE OF THE BIGGEST LIMITATIONS OF AI IS NOT ITS ACTUAL CAPABILITIES, BUT THE PERCEPTION OF THE PROGRAMMING AND THE PERCEPTION OF HOW IT AFFECTS UNIVERSITY LEARNING BY STUDENTS AND FACULTY MEMBERS [1]. ARTIFICIAL INTELLIGENCE CAN BE PERCEIVED AS A COMPLEX TOOL THAT MAY NOT BE GRASPED OR UNDERSTOOD BY ALL USERS. IN THIS CURRENT STUDY, A BIVARIATE ANALYSIS WAS COMPLETED ON NINETY DIFFERENT VARIABLES TO DETERMINE IF ANY OF THE VARIABLES AFFECT STUDENTS' PERCEPTION OF A.I. USEFULNESS. IN ADDITION TO A BIVARIATE ANALYSIS, A CLASSIFICATION MODEL WAS BUILT TO ACCURATELY PREDICT STUDENTS' PERCEPTION OF A.I. USEFULNESS. RESULTS FROM THIS STUDY DEMONSTRATED THAT THE PREDICTORS OF A.I. USEFULNESS ARE EVER USED, WOULD LIKE TO USE, INSTRUCTORS ENCOURAGE, CHEATERS, BANNED, A.I. IS EASY TO USE, GPA, HURDLES-SUPPORT, A.I. DOES NOT ALLOW FOR CREATIVITY, AND A.I. IS WELL-INTEGRATED. BY FOCUSING ON THESE A.I. USEFULNESS PREDICTOR VARIABLES IN THE FUTURE, HIGHER EDUCATIONAL INSTITUTIONS CAN BETTER CHOOSE HOW AND WHEN TO INCORPORATE A.I. INTO COURSES TO BETTER FIT THE NEEDS OF THEIR CURRENT AND FUTURE STUDENTS.

# BUSINESS UNDERSTANDING

## BACKGROUND OF THE BUSINESS ENVIRONMENT

In the changing educational production environment, it is imperative that institutions introduce, teach, and use technological systems to successfully deliver and equip their publics with an adequate knowledge base. Educational practices are continuously evolving for the betterment of students and efficiency for administration, faculty, and staff. It is imperative for institutions to recognize avenues of growth in technological resources and identify how each resource should and should not be used. The introduction of A.I. in higher education has brought concerns about its usefulness and acceptability to higher education institutions around the world. Usefulness and acceptability can be examined from the students' perspectives to determine the continuation, or the start of a given task. Generally, educational institutions will continue the use of technology for given tasks if the perceived value is high and discontinue if the perceived value is low. As institutions focus their efforts on understanding the perceived value of artificial intelligence in higher education, they can make use of the variables that show high value and therefore improve overall operations and efficiency in the organization.

## PURPOSE

### Business Objective:

The objective of this data analysis project is to identify variables that are perceived to have high value by students when incorporating A.I. into educational institutions' purpose of preparing students to be successful outside of the classroom. The dataset to be used for analysis contains responses from approximately 138 students who are currently enrolled in courses at UL Lafayette- B.I. Moody III College of Business Administration. The analysis will identify which variables show high perceived values and which variables show low perceived values. Perceived value will be measured using the variable "useful" which is labeled in the data set as "True or False - A.I. is useful to me in my coursework" In addition, this data analysis project will build a classification model to predict how future students and classes can successfully incorporate A.I. into learning procedures. Some examples of key variables to be analyzed will be the value of experience, stereotypes, instructor opinions, and institutional regulation and support.

### Business Questions to be answered:

1. To what degree does experience affect the perceived usefulness among students of A.I. in higher education?
2. Are student demographics related to the perceived value of A.I. in higher education?
3. Does overall perceived value of A.I. in higher education differ based on the opinions and distribution processes of instructors?
4. If students have previously used A.I. in their courses, are they more or less likely to perceive usage as high or low?
5. How does students' concerns with A.I. technology affect feeling of operational use?

# DATA UNDERSTANDING

## DESCRIPTION OF DATA

The data presented in this report was collected by GraceAnn Carroll, Marketing Manager- B.I. Moody III College of Business Administration. The data was collected to uncover factors that are perceived to have high value when incorporating A.I. into higher educational institutions. This data was obtained through a Qualtrics survey distributed to students currently enrolled in courses in the B.I. Moody III College of Business Administration in the Fall of 2023. Of the 90 variables for 138 student respondents, we focus on the 40 variables given in the table below. Note that the main variable of interest is “A.I. Useful.” For model-building this will be our outcome variable.

Link to survey: [https://louisianabus.az1.qualtrics.com/jfe/form/SV\\_0MWGgtyLSmqvoxx](https://louisianabus.az1.qualtrics.com/jfe/form/SV_0MWGgtyLSmqvoxx)

variables

Variable	Type	Variable	Type
Age	Numerical	Gender	Categorical
GPA	Numerical	Academic Classification	Categorical
A.I. Familiarity	Numerical	Major	Categorical
Courses	Numerical	Student Type	Categorical
A.I. w/out Instructor	Numerical	Grade Change	Ordinal
Awareness of Peer use	Numerical	General Self- Efficiency	Ordinal
Technology use	Numerical	Hurdles	Categorical
System Usability	Ordinal	Forms of A.I.	Categorical
Knowledge of A.I.	Ordinal	A.I. Stigmas	Categorical
Personality	Ordinal	Ethical Concern	Ordinal
Single Ease Question	Ordinal	Quality Concern	Ordinal
Scalability Concern	Ordinal	Knowledge Concern	Ordinal
Preparedness Concern	Ordinal	Completion time	Numerical
Lack of Creativity	Ordinal	Defeats Education Purpose	Ordinal

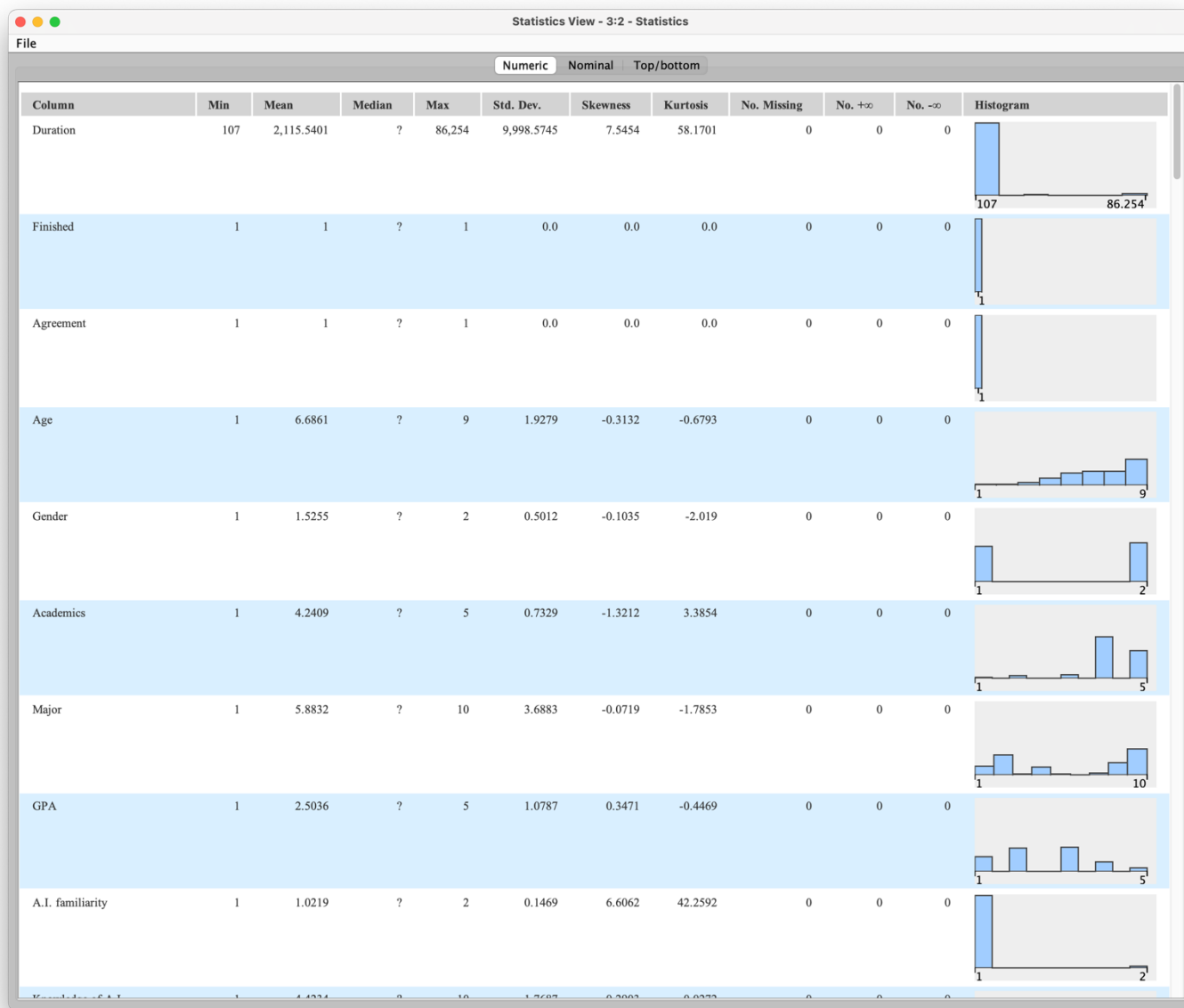


PART 3

# DATA EXPLORATION

## UNIVARIATE ANALYSIS

Numeric Table – From the Statistics node in KNIME



File

Numeric Nominal Top/bottom

Variable	Count	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Chart
Knowledge of A.I.	1	4.4234	?	10	1.7687	0.2903	-0.0272	0	0	0		
Q9_1Would like to use	1	3.2044	?	5	1.1189	-0.509	-0.7966	0	0	0		
Q9_2Complex	1	2.635	?	5	0.8983	0.1114	-0.3102	0	0	0		
Q9_3Easy	1	3.5474	?	5	0.9312	-0.2511	-0.5524	0	0	0		
Q9_4NeedSupport	1	2.5912	?	5	1.1085	0.1111	-1.0324	0	0	0		
Q9_5Integrated	1	3.3869	?	5	0.7788	-0.0423	0.0652	0	0	0		
Q9_6Inconsistency	1	3.1971	?	5	0.8731	-0.1945	-0.022	0	0	0		
Q9_7learnquick	1	3.708	?	5	0.9484	-0.695	0.0262	0	0	0		
Q9_8cumbersome	1	2.5839	?	5	0.8882	0.2213	0.0698	0	0	0		
Q9_9feelconfident	1	3.0219	?	5	1.0742	0.0282	-0.9197	0	0	0		

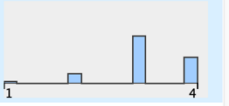
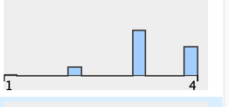
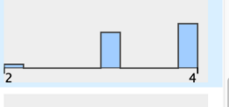
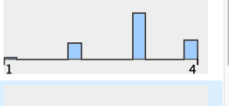
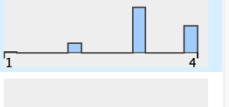
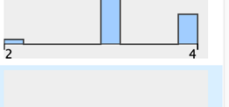
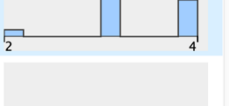
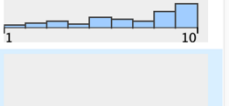
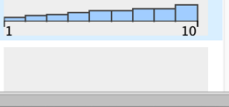

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Numeric Nominal Top/bottom

Variable	1	Mean	?	5	1.0742	0.0282	-0.9197	0	0	0	Chart
Q9_9feelconfident	1	3.0219	?	5	1.0742	0.0282	-0.9197	0	0	0	
Q9_10needlearn	1	3.1022	?	5	1.2144	-0.0735	-1.143	0	0	0	
Number of courses	1	1.1022	?	6	0.5462	6.9348	54.063	0	0	0	
Grade change	1	2.7226	?	5	0.8552	0.0678	0.1739	0	0	0	
Ever use	1	1.6861	?	2	0.4658	-0.8111	-1.3622	0	0	0	
Peers	1	1.3285	?	2	0.4714	0.7386	-1.4763	0	0	0	
Q14_1solveproblems	1	3.3431	?	4	0.5995	-0.7216	1.7627	0	0	0	
Q14_11opposes	1	2.8321	?	4	0.6011	-0.7422	1.5285	0	0	0	
Q14_13stickgoals	1	3.2409	?	4	0.6477	-0.6081	0.8634	0	0	0	
Q14_14unexpectedevents	1	3.1679	?	4	0.6705	-0.506	0.4416	0	0	0	

File

Numeric Nominal Top/bottom

Q14_14unexpectedevents	1	3.1679	?	4	0.6705	-0.506	0.4416	0	0	0	
Q14_12resourcefulness	1	3.2409	?	4	0.6477	-0.4433	0.0869	0	0	0	
Q14_4investeffort	2	3.4964	?	4	0.5704	-0.5887	-0.6466	0	0	0	
Q14_5remaincalm	1	3	?	4	0.7174	-0.3637	0.0074	0	0	0	
Q14_6findsolutions	1	3.1971	?	4	0.6624	-0.3936	-0.0753	0	0	0	
Q14_7thinksolutions	2	3.2993	?	4	0.5735	-0.112	-0.5629	0	0	0	
Q14_8handleway	2	3.365	?	4	0.6169	-0.4235	-0.6442	0	0	0	
A.I. Concerns - Ethics	1	6.7299	?	10	2.6885	-0.4469	-0.905	0	0	0	
A.I. Concerns - Quality	1	6.146	?	10	2.5308	-0.2301	-0.84	0	0	0	
A.I. Concerns - Scalability	0.0	4.6715	?	10	2.4885	0.179	-0.5466	0	0	0	



File

Numeric Nominal Top/bottom

Item	0.0	4.6715	?	10	2.4885	0.179	-0.5466	0	0	0	Figure
A.I. Concerns - Scalability	0.0	4.6715	?	10	2.4885	0.179	-0.5466	0	0	0	
A.I. Concerns - Knowledge	1	4.9708	?	10	2.6036	0.3343	-0.6287	0	0	0	
A.I. Concerns - preparedness	1	5.2847	?	10	2.8048	0.1211	-0.9803	0	0	0	
Q16_1reserved	1	3.3577	?	5	1.3214	-0.4336	-0.9847	0	0	0	
Q16_2trusting	1	4.1679	?	5	1.0472	-1.2006	0.5351	0	0	0	
Q16_3lazy	1	2.4453	?	5	1.1109	0.1889	-1.0685	0	0	0	
Q16_4relaxed	1	3.3285	?	5	1.1639	-0.442	-0.7184	0	0	0	
Q16_5notartistic	1	2.927	?	5	1.3429	-0.05	-1.2683	0	0	0	
Q16_6outgoing	1	3.635	?	5	1.2711	-0.722	-0.5661	0	0	0	
Q16_7findfault	1	2.7737	?	5	1.1114	0.0686	-0.8186	0	0	0	

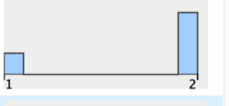
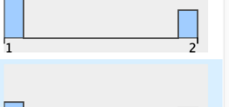
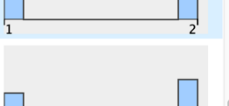
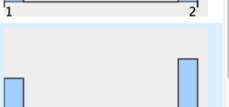
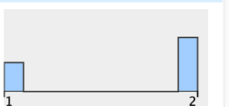
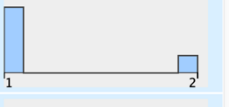
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Numeric Nominal Top/bottom

Item	1	Mean	SD	N	Min	Max	Q1	Q3	Q0	Q4	Chart
Q16_6outgoing	1	3.635	?	5	1.2711	-0.722	-0.5661	0	0	0	
Q16_7findfault	1	2.7737	?	5	1.1114	0.0686	-0.8186	0	0	0	
Q16_8thorough	1	4.3139	?	5	0.7149	-1.1577	2.6922	0	0	0	
Q16_9nervous	1	3.365	?	5	1.2595	-0.3842	-0.9258	0	0	0	
Q16_10imagination	1	4.1387	?	5	0.9485	-0.9117	0.1286	0	0	0	
Time	1	2.4307	?	5	0.8471	1.5464	1.3603	0	0	0	
Q20_1cheaters	1	1.635	?	2	0.4832	-0.5672	-1.7033	0	0	0	
Q20_2highergrades	1	1.4161	?	2	0.4947	0.3444	-1.9095	0	0	0	
Q20_3workforceprepared	1	1.5693	?	2	0.497	-0.2832	-1.9485	0	0	0	
Q20_4plagiarism	1	1.5182	?	2	0.5015	-0.0739	-2.0243	0	0	0	

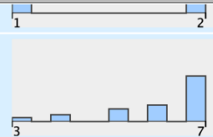
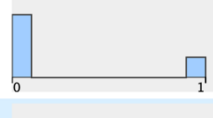
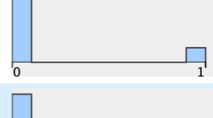
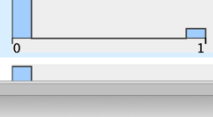

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Numeric Nominal Top/bottom

Q20_4plagiarism	1	1.5182	?	2	0.5015	-0.0739	-2.0243	0	0	0		
Q20_5banned	1	1.7445	?	2	0.4377	-1.1338	-0.7253	0	0	0		
Q20_6taught	1	1.219	?	2	0.4151	1.3742	-0.1136	0	0	0		
Q20_7instructoruse	1	1.3358	?	2	0.474	0.7032	-1.528	0	0	0		
Q20_8instructorencourage	1	1.4672	?	2	0.5008	0.1331	-2.0119	0	0	0		
Q20_9nocreativity	1	1.5766	?	2	0.4959	-0.3137	-1.93	0	0	0		
Q20_10defeatseducation	1	1.6131	?	2	0.4888	-0.4698	-1.8059	0	0	0		
Q20_11replaceinstructors	1	1.6496	?	2	0.4788	-0.6343	-1.6216	0	0	0		
Q20_12timemanagement	1	1.2117	?	2	0.41	1.4273	0.0375	0	0	0		
SEQ	3	6.1314	?	7	1.1557	-1.1598	0.307	0	0	0		

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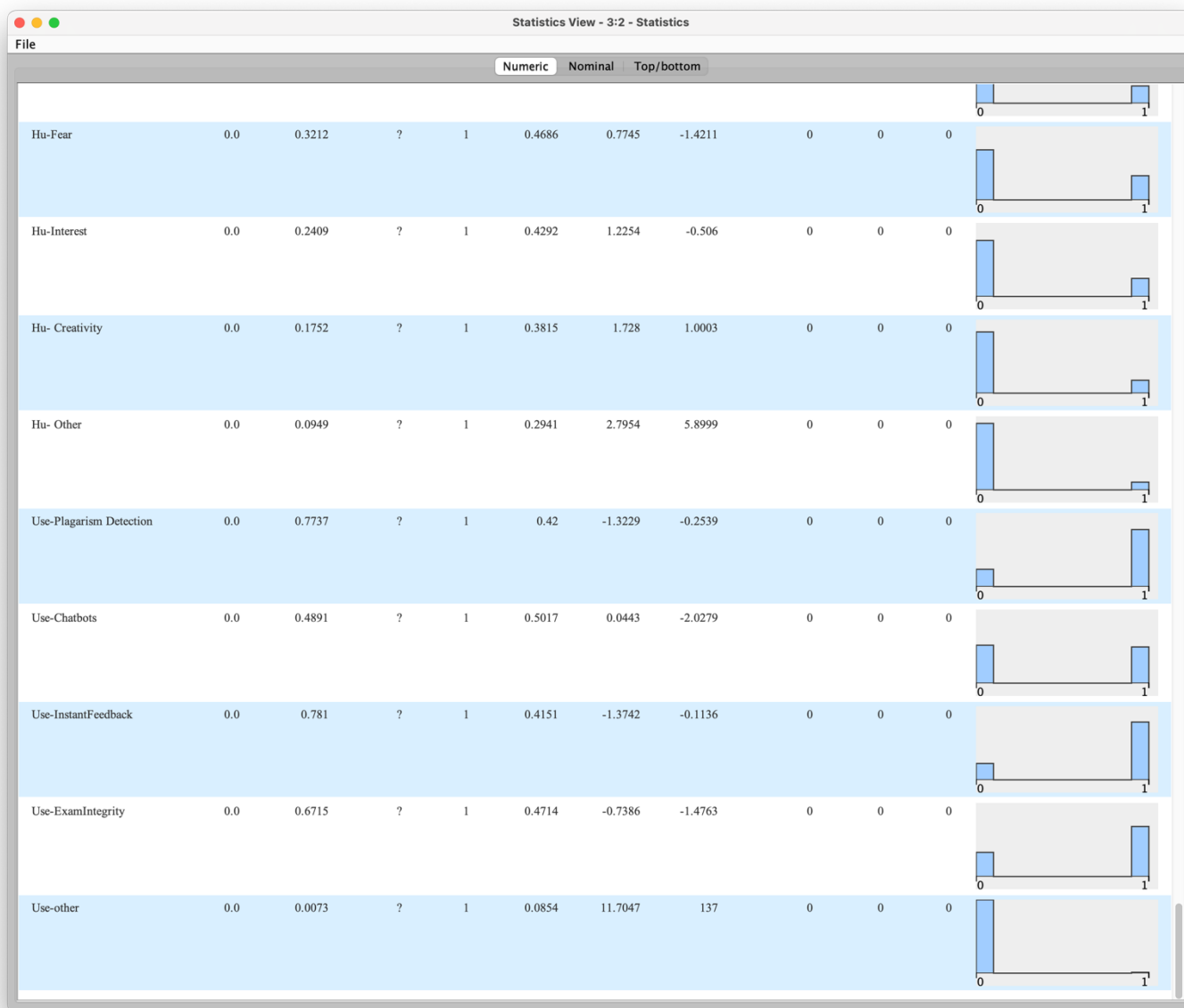
Numeric Nominal Top/bottom

SEQ	3	6.1314	?	7	1.1557	-1.1598	0.307	0	0	0	
Traditional Student	0.0	0.6715	?	1	0.4714	-0.7386	-1.4763	0	0	0	
Online Student	0.0	0.3139	?	1	0.4658	0.8111	-1.3622	0	0	0	
A.P. Classes	0.0	0.2409	?	1	0.4292	1.2254	-0.506	0	0	0	
Dual Enrollment	0.0	0.3504	?	1	0.4788	0.6343	-1.6216	0	0	0	
Comm. College Transfer	0.0	0.1679	?	1	0.3751	1.7969	1.2468	0	0	0	
4 year inst. transfer	0.0	0.0803	?	1	0.2727	3.1233	7.8696	0	0	0	
first-generation	0.0	0.2409	?	1	0.4292	1.2254	-0.506	0	0	0	
gap year	0.0	0.1168	?	1	0.3223	2.4129	3.8783	0	0	0	
international student	0.0	0.0292	?	1	0.169	5.655	30.4226	0	0	0	

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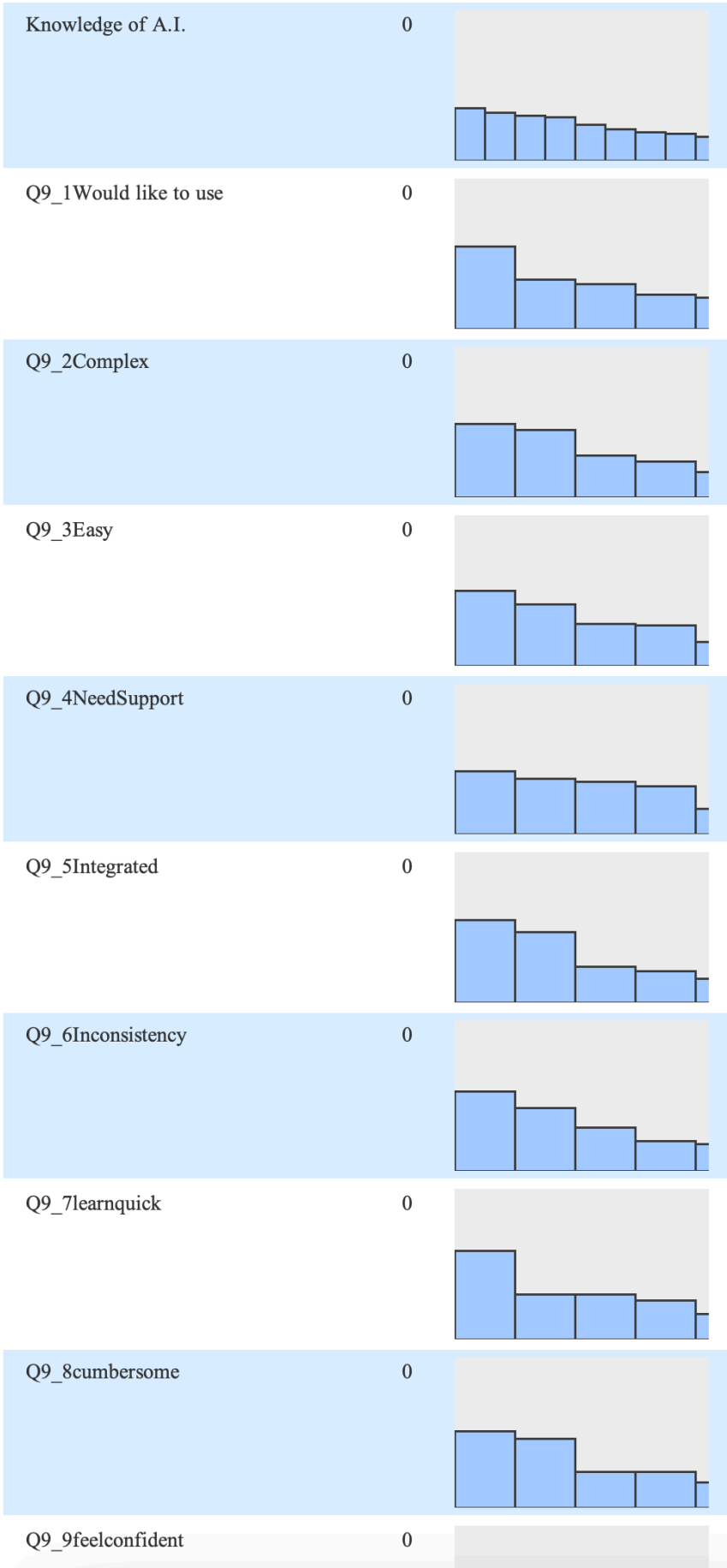
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	0.0	0.0292	?	1	0.169	5.655	30.4226	0	0	0	
international student	0.0	0.0292	?	1	0.169	5.655	30.4226	0	0	0	
Hometown not LA	0.0	0.1022	?	1	0.304	2.6559	5.1283	0	0	0	
part-time worker	0.0	0.438	?	1	0.498	0.2529	-1.965	0	0	0	
full-time worker	0.0	0.2847	?	1	0.4529	0.9649	-1.0849	0	0	0	
commuter student	0.0	0.3066	?	1	0.4628	0.8484	-1.2995	0	0	0	
Hu- None	0.0	0.2482	?	1	0.4335	1.1789	-0.6194	0	0	0	
Hu- Time	0.0	0.1752	?	1	0.3815	1.728	1.0003	0	0	0	
Hu- Knowledge	0.0	0.4234	?	1	0.4959	0.3137	-1.93	0	0	0	
Hu- Support	0.0	0.2336	?	1	0.4247	1.2734	-0.3844	0	0	0	
Hu-Fear	0.0	0.3212	?	1	0.4686	0.7745	-1.4211	0	0	0	



Nominal Table - From the Statistics node in KNIME

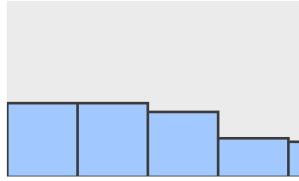
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Finished	0	
Agreement	0	
Age	0	
Gender	0	
Academics	0	
Major	0	
GPA	0	
A.I. familiarity	0	





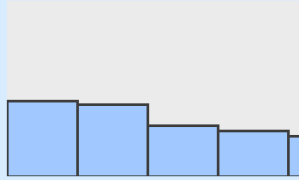
Q9\_9feelconfident

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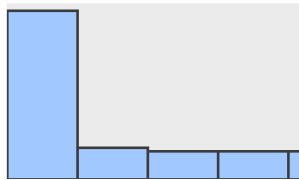
Q9\_10needlearn

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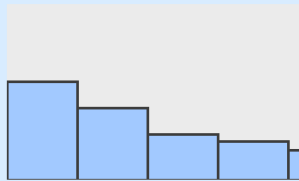
Number of courses

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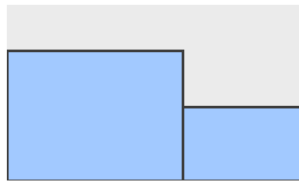
Grade change

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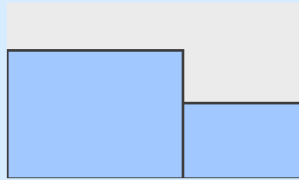
Ever use

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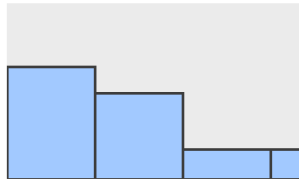
Peers

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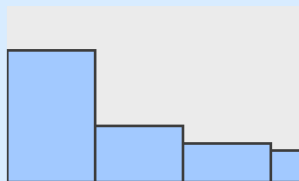
Q14\_1solveproblems

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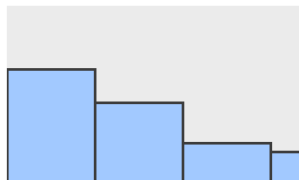
Q14\_11opposes

0



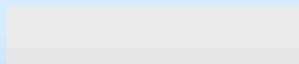
Q14\_13stickgoals

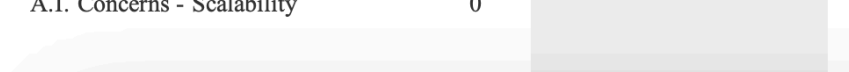
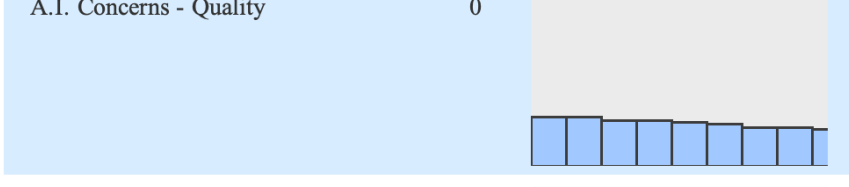
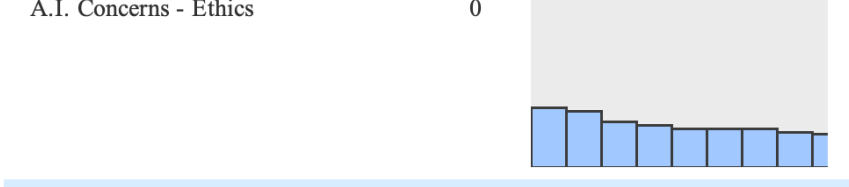
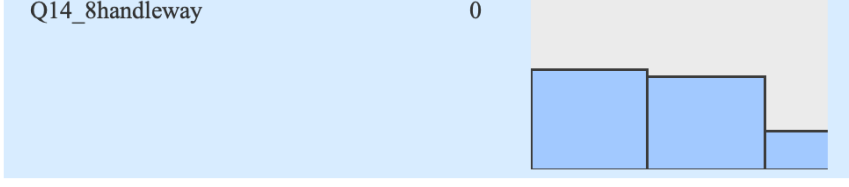
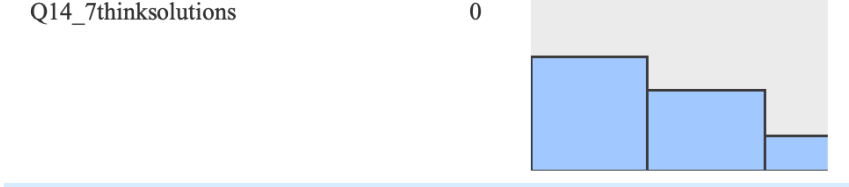
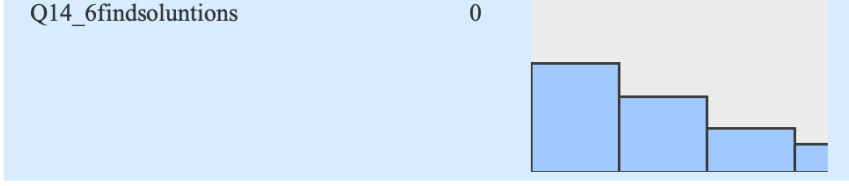
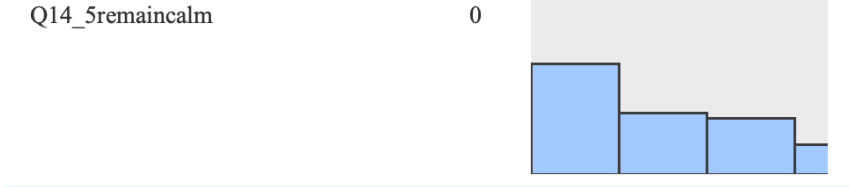
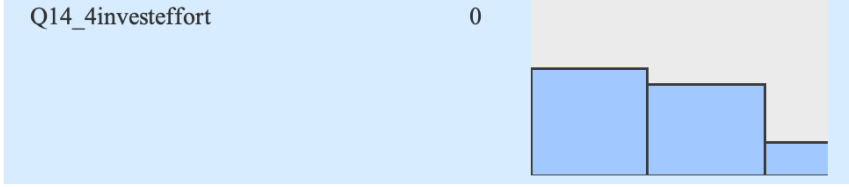
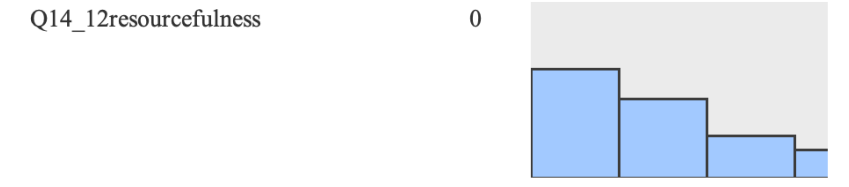
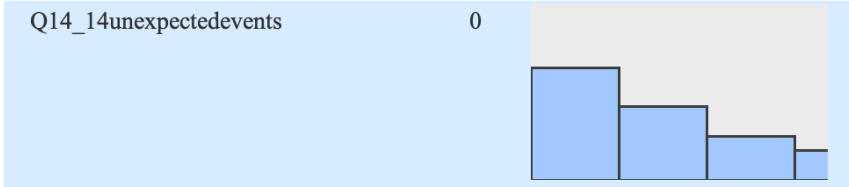
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Q14\_14unexpectedevents

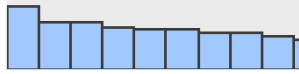
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A.I. Concerns - Scalability

0



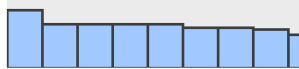
A.I. Concerns - Knowledge

0



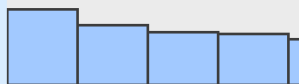
A.I. Concerns - preparedness

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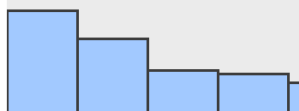
Q16\_1reserved

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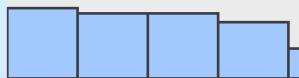
Q16\_2trusting

0



Q16\_3lazy

0



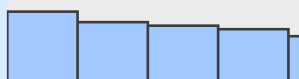
Q16\_4relaxed

0



Q16\_5notartistic

0



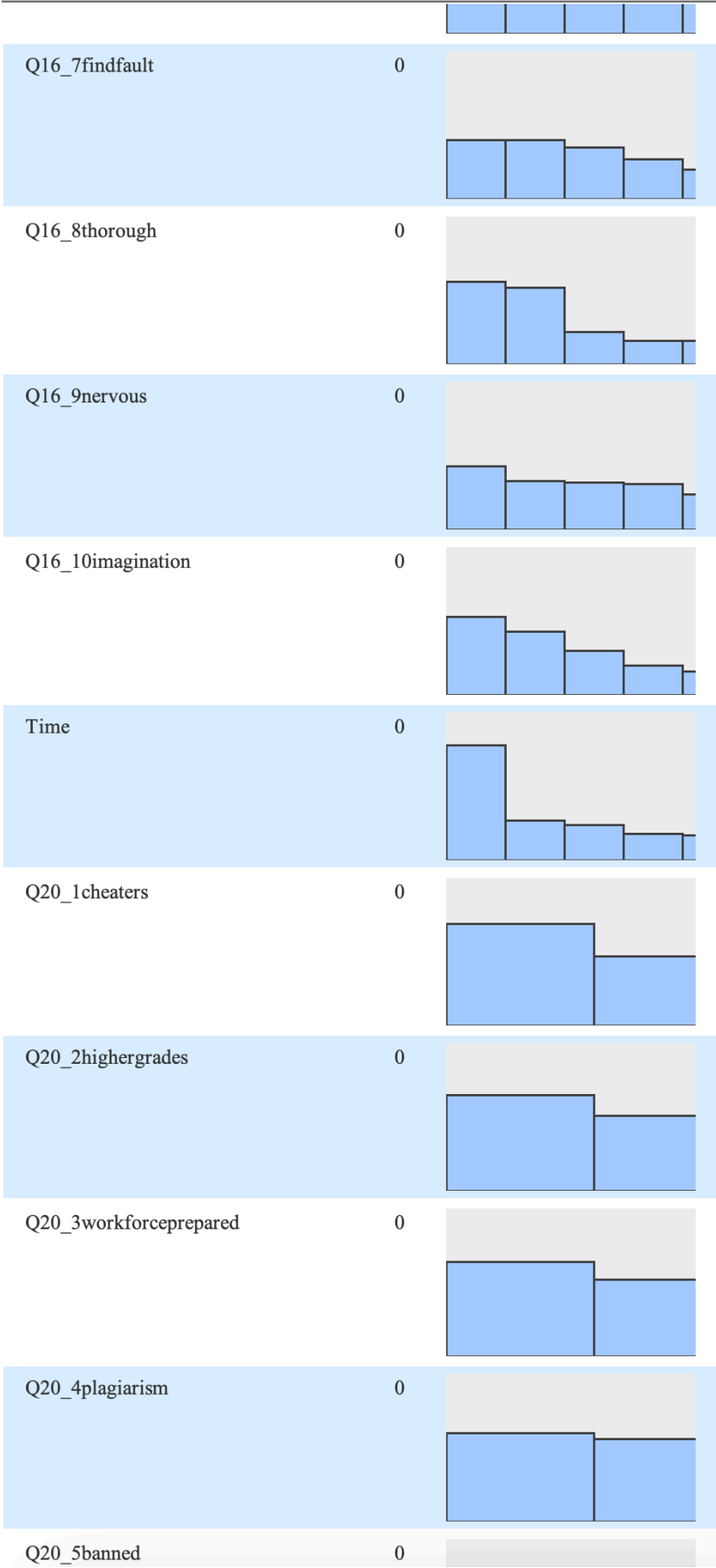
Q16\_6outgoing

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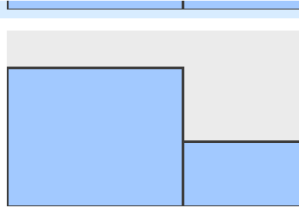
Q16\_7findfault

0



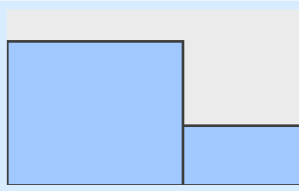
Q20\_5banned

0



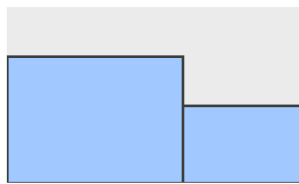
Q20\_6taught

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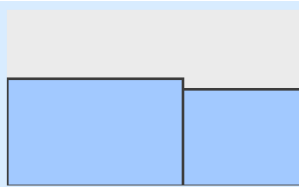
Q20\_7instructoruse

0



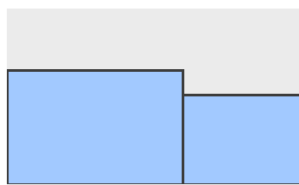
Q20\_8instructorencourage

0



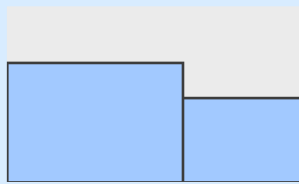
Q20\_9nocreativity

0



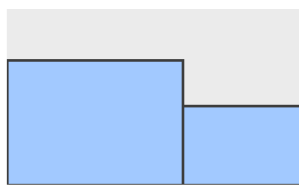
Q20\_10defeatseducation

0



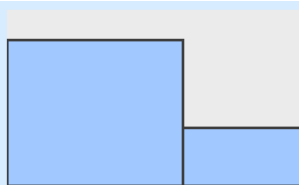
Q20\_11replaceinstructors

0



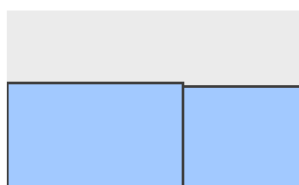
Q20\_12timemanagement

0



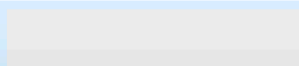
A.I. Useful

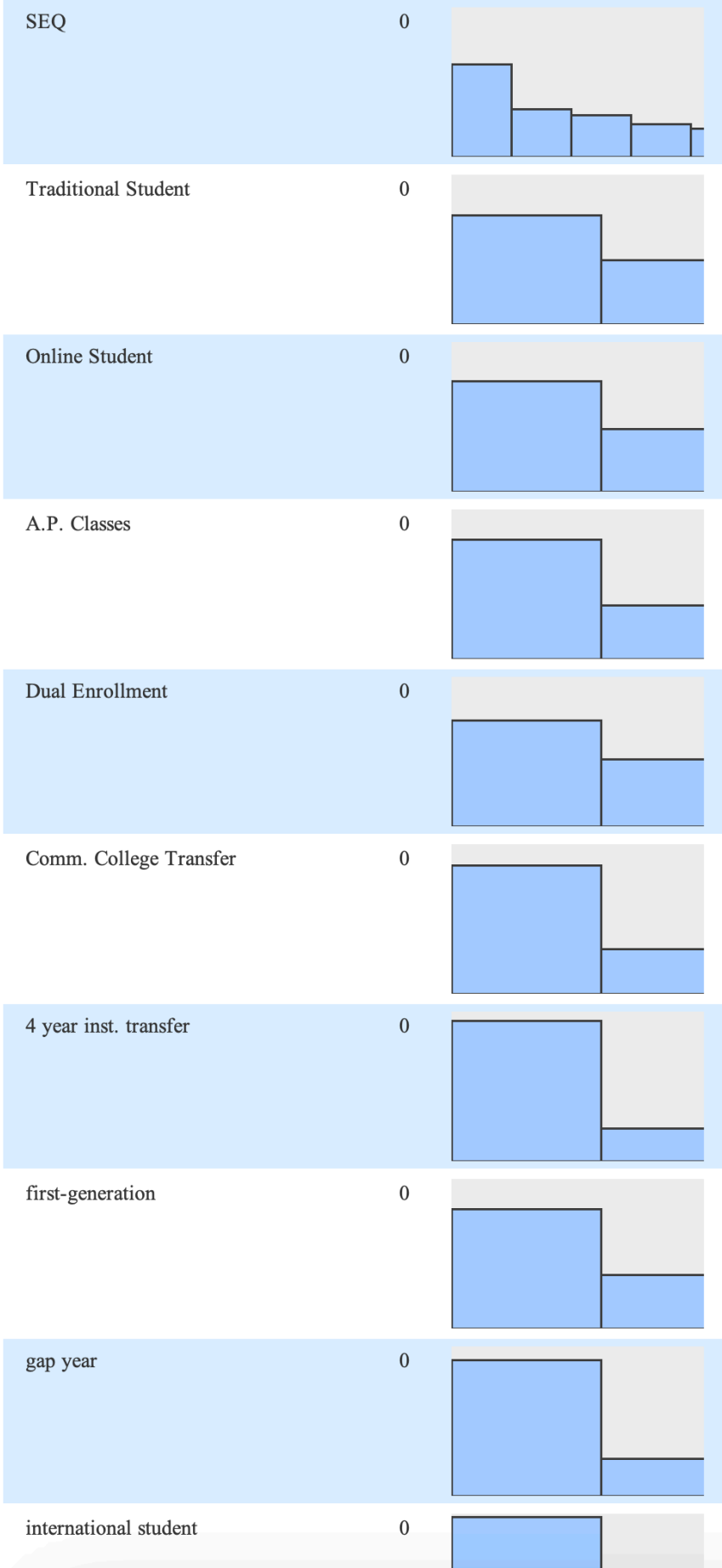
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SEQ

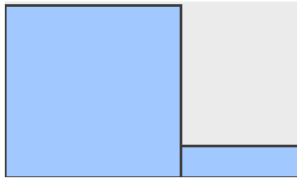
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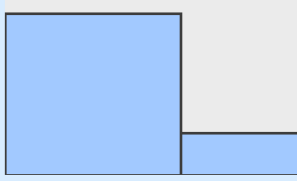
international student

0



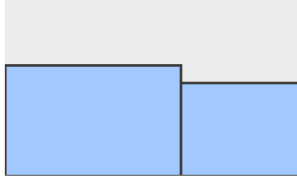
Hometown not LA

0



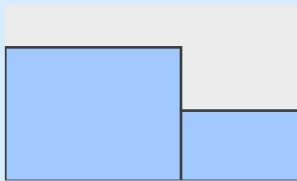
part-time worker

0



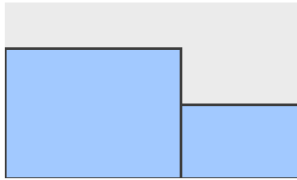
full-time worker

0



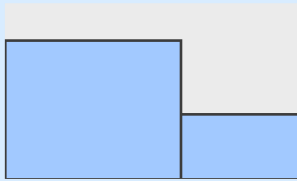
commuter student

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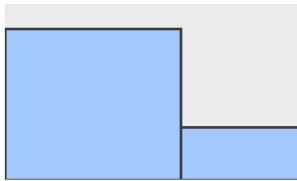
Hu- None

0



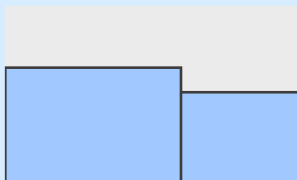
Hu- Time

0



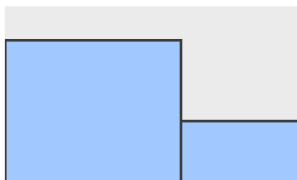
Hu- Knowledge

0



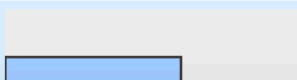
Hu- Support

0



Hu-Fear

0



Numeric

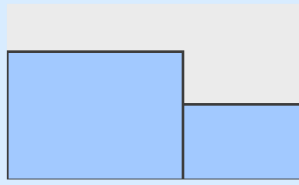
Nominal

Top/bottom



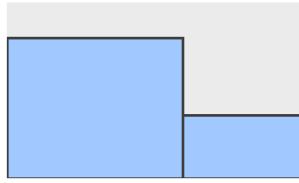
Hu-Fear

0



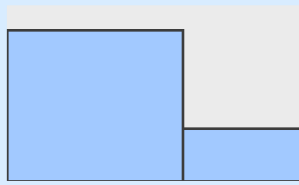
Hu-Interest

0



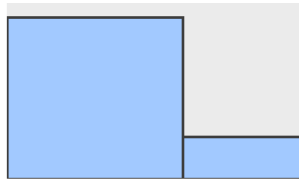
Hu- Creativity

0



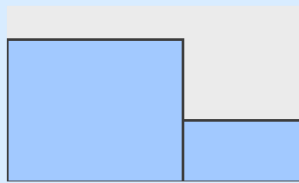
Hu- Other

0



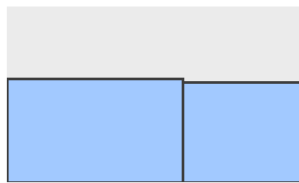
Use-Plagarism Detection

0



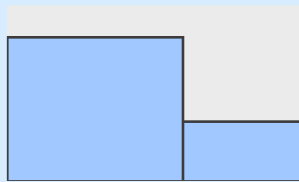
Use-Chatbots

0



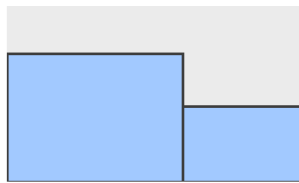
Use-InstantFeedback

0



Use-ExamIntegrity

0



Use-other

0

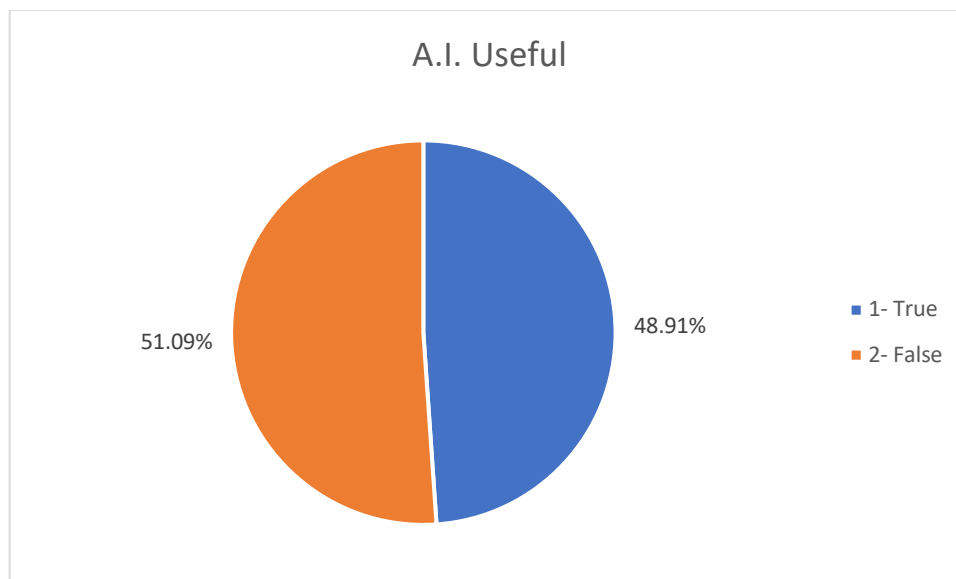




Since there is no missing data, all variables can be used in the analysis of the variables that influence student's perceived value (useful). In addition, after running the statistics node in KNIME, no data outliers were found. The histograms shown demonstrate that variables are evenly distributed. The variable "duration" may be of concern because of the high standard deviation suggesting skewness. The variable duration can be removed since it is not relevant.

After creating a pivot table for univariate analysis of Useful, it was found that out of 137 respondents, 48.91% believed that A.I. is useful and 51.09% believe that A.I. is not useful.

Row Labels	Count of A.I. Useful	Count of A.I. Useful2
1- True	67	48.91%
2- False	70	51.09%
<b>Grand Total</b>	<b>137</b>	<b>100.00%</b>

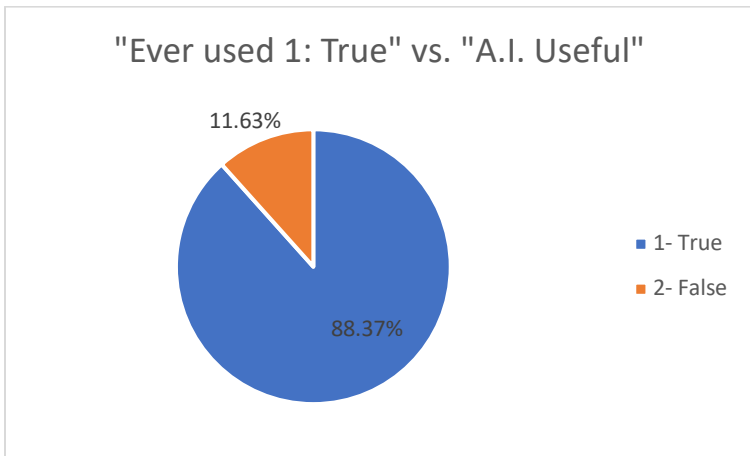


## BIVARIATE ANALYSIS

Correlation Matrix – With a focus on Variables that influence "A.I. Useful"

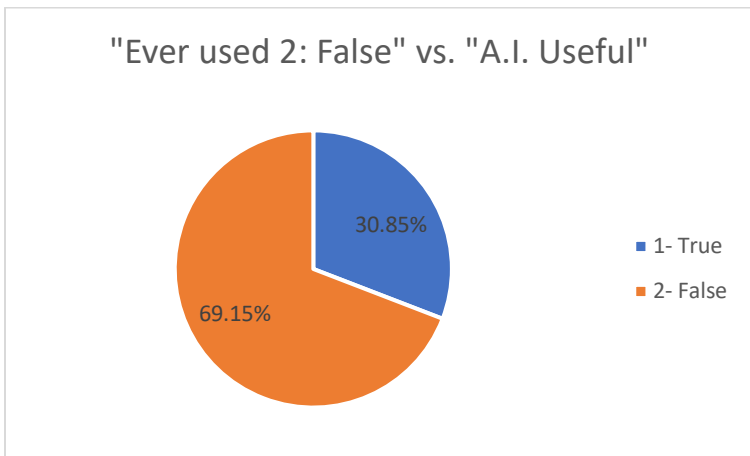


Predictor Variable 1: Ever Used



Ever use 1

A.I. Useful	Count of Ever use	Count of Ever use2
1- True	88.37%	38
2- False	11.63%	5
<b>Grand Total</b>	<b>100.00%</b>	<b>43</b>

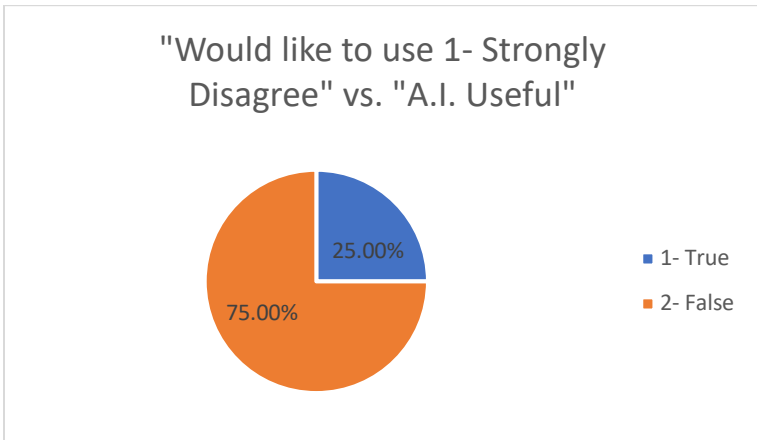


Ever use 2

A.I. Useful	Count of Ever use	Count of Ever use2
1- True	30.85%	29
2- False	69.15%	65
<b>Grand Total</b>	<b>100.00%</b>	<b>94</b>

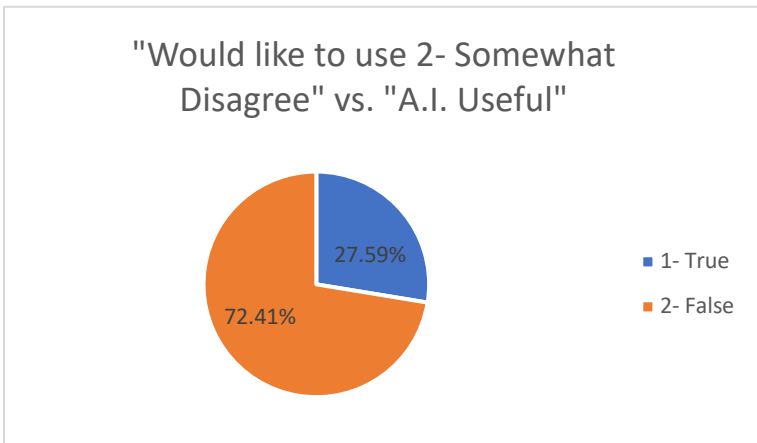
When evaluating “ever used” as a predictor variable for “A.I. Useful”, there is a difference between those who have previously used A.I. in any form (True) and those who have not previously used A.I. in any form (False). In the ever used true group, 88.37% of individuals believe A.I. is useful while 11.63% do not think A.I. is useful. In contrast, 30.85 % of individuals in the ever used false group believe A.I. is useful while 69.15% of them do not. This data clearly demonstrates that individuals are more likely to believe A.I. is useful if they have previously used A.I..

Predictor Variable 2: Would like to use



Q9\_1Would like to use 1

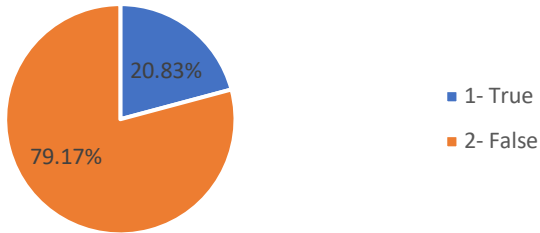
A.I. Useful	Count of Q9_1Would like to use	Count of Q9_1Would like to use2
1- True	25.00%	3
2- False	75.00%	9
<b>Grand Total</b>	<b>100.00%</b>	<b>12</b>



Q9\_1Would like to use 2

A.I. Useful	Count of Q9_1Would like to use	Count of Q9_1Would like to use2
1- True	27.59%	8
2- False	72.41%	21
<b>Grand Total</b>	<b>100.00%</b>	<b>29</b>

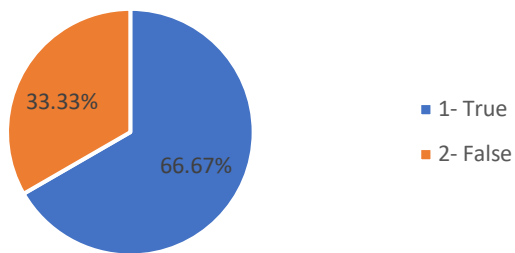
"Would like to use 3- Neither Agree nor Disagree" vs. "A.I. Useful"



Q9\_1Would like to use 3

A.I. Useful	Count of Q9_1Would like to use	Count of Q9_1Would like to use2
1- True	20.83%	5
2- False	79.17%	19
<b>Grand Total</b>	<b>100.00%</b>	<b>24</b>

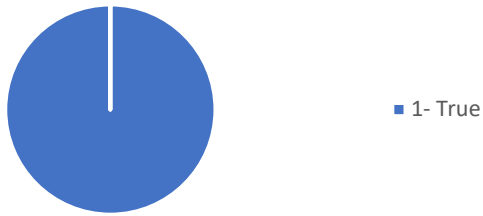
"Would like to use 4- Somewhat Agree" vs. "A.I. Useful"



Q9\_1Would like to use 4

A.I. Useful	Count of Q9_1Would like to use	Count of Q9_1Would like to use2
1- True	66.67%	42
2- False	33.33%	21
<b>Grand Total</b>	<b>100.00%</b>	<b>63</b>

"Would like to Use 5- Stronly Agree" vs. "A.I. Useful"

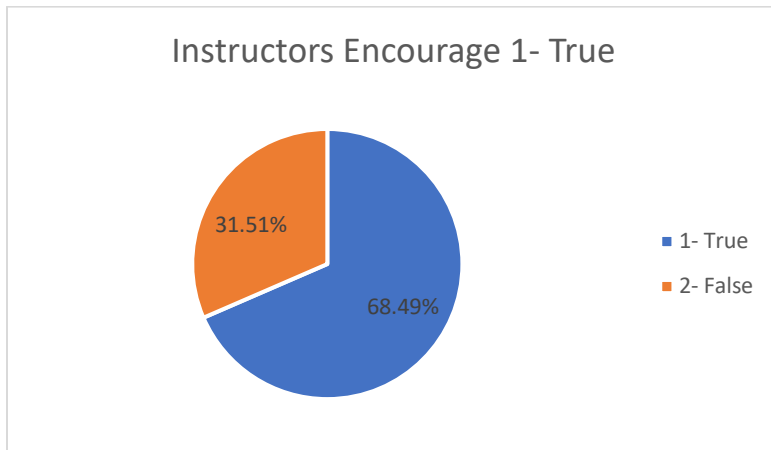


Q9\_1Would like to use 5

A.I. Useful	Count of Q9_1Would like to use	Count of Q9_1Would like to use2
1- True	100.00%	9
<b>Grand Total</b>	<b>100.00%</b>	<b>9</b>

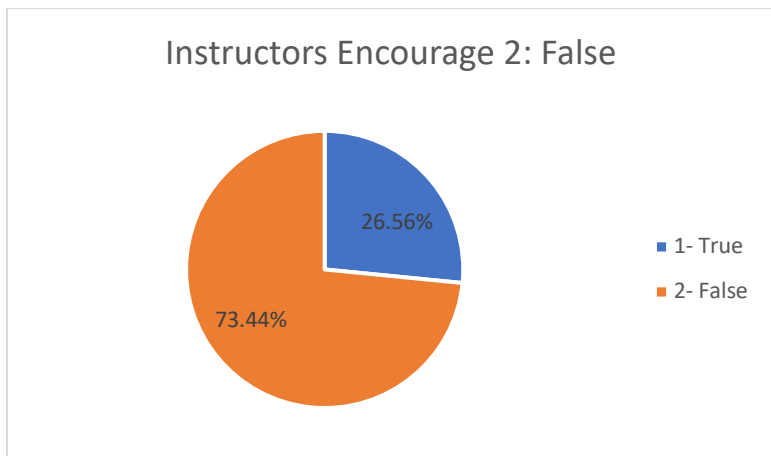
When evaluating “would like to use” as a predictor variable for “A.I. Useful”, there is a large difference between strongly agree and strongly disagree. 100% of students who strongly agree that they would like to use A.I. also believe that A.I. is useful while only 25% of the strongly disagree group believe A.I. is useful. The data shows that students who agree or strongly agree to “would like to use A.I.” are more likely to believe A.I. is useful than those who are not interested or ambivalent about using A.I..

Predictor Variable 3: Instructors\_Encourage



Q20\_8instructorencourage 1

A.I. Useful	Count of Q20_8instructorencourage	Count of Q20_8instructorencourage2
1- True	68.49%	50
2- False	31.51%	23
<b>Grand Total</b>	<b>100.00%</b>	<b>73</b>

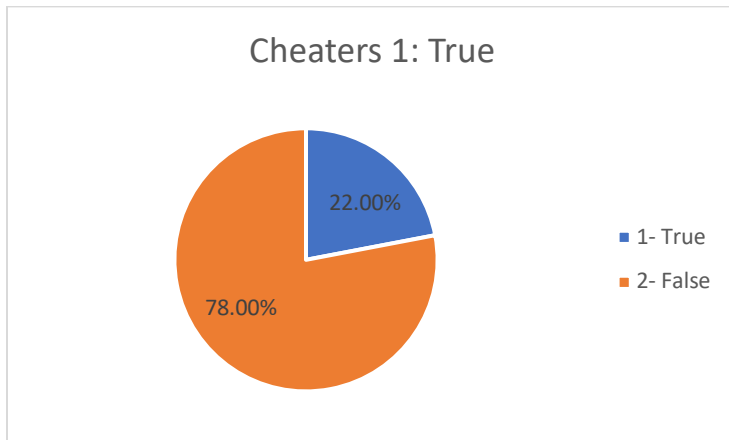


Q20\_8instructorencourage 2

A.I. Useful	Count of Q20_8instructorencourage	Count of Q20_8instructorencourage2
1- True	26.56%	17
2- False	73.44%	47
<b>Grand Total</b>	<b>100.00%</b>	<b>64</b>

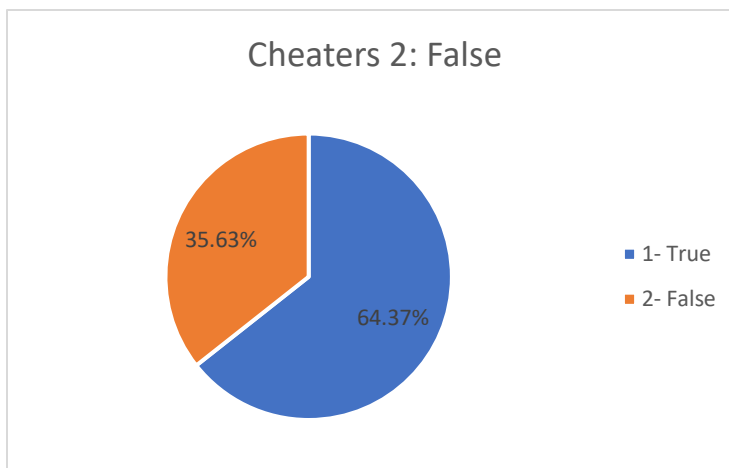
When evaluating “instructors encourage” as a predictor variable for “A.I. Useful”, there is a difference between those who believe instructors should encourage students to use A.I. in courses (True) and those who do not believe instructors should encourage students to use A.I. in courses (False). In the instructors encourage true group, 68.49% of individuals believe A.I. is useful while 31.51% do not think A.I. is useful. In contrast, 26.56% of individuals in the instructors encourage false group believe A.I. is useful while 73.44% of them do not. This data clearly demonstrates that individuals are more likely to believe A.I. is useful if they believe that instructors should encourage students to use A.I. in courses.

Predictor Variable 4: Cheaters



Q20_1cheaters	1
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A.I. Useful	Count of Q20_1cheaters	Count of Q20_1cheaters2
1- True	22.00%	11
2- False	78.00%	39
<b>Grand Total</b>	<b>100.00%</b>	<b>50</b>



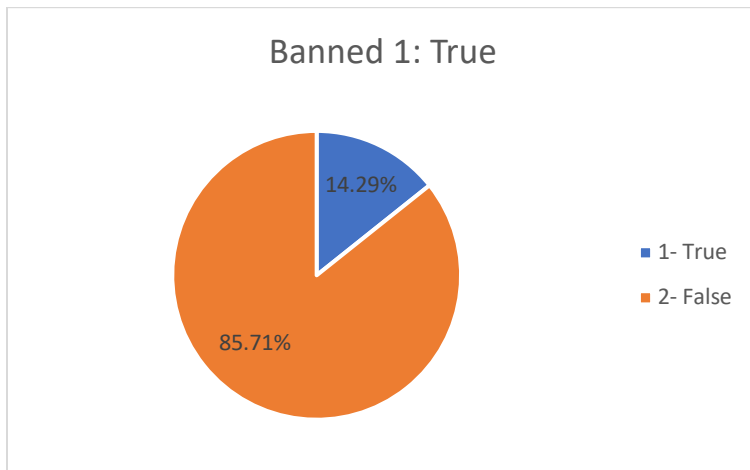
Q20_1cheaters	2
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A.I. Useful	Count of Q20_1cheaters	Count of Q20_1cheaters2
1- True	64.37%	56
2- False	35.63%	31
<b>Grand Total</b>	<b>100.00%</b>	<b>87</b>

When evaluating “cheaters” as a predictor variable for “A.I. Useful”, there is a difference between those who believe students who use A.I. are cheaters (True) and those who do not believe students who use A.I. are cheaters (False). In the cheaters true group, 22% of individuals believe A.I. is useful while 78% do not think A.I. is useful. In contrast, 64.37% of individuals in the cheaters false group believe A.I. is useful while 35.63% of them do not. This data clearly demonstrates that individuals are more likely to believe A.I. is useful if they believe that students who use A.I. are not cheaters.

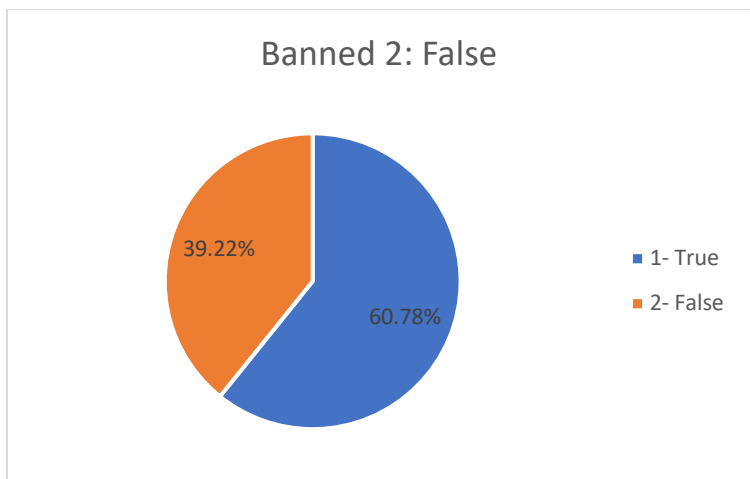


Predictor Variable 5: Banned



Q20_5banned	1
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A.I. Useful	Count of Q20_5banned	Count of Q20_5banned2
1- True	14.29%	5
2- False	85.71%	30
<b>Grand Total</b>	<b>100.00%</b>	<b>35</b>



Q20_5banned	2
-------------	---

A.I. Useful	Count of Q20_5banned	Count of Q20_5banned2
1- True	60.78%	62
2- False	39.22%	40
<b>Grand Total</b>	<b>100.00%</b>	<b>102</b>

When evaluating “banned” as a predictor variable for “A.I. Useful”, there is a difference between those who believe A.I. should be banned in schools (True) and those who do not believe A.I. should be banned in schools (False). In the banned true group, 14.29% of individuals believe A.I. is useful while 85.71% do not think A.I. is useful. In contrast, 60.78% of individuals in the banned false group believe A.I. is useful while 39.22% of them do not. This data clearly demonstrates that individuals are more likely to believe A.I. is useful if they believe that A.I. should not be banned in schools.

# DATA ANALYSIS PLAN

## METHODOLOGY

In this data analysis project, I initially used Microsoft Excel and KNIME to check and explore the data. After loading the data in Excel, I created a table where I sorted each category and checked for any extreme values. After checking the data in Excel, I loaded the data in KNIME and ran the statistics node to check for any missing values and to check the histograms for outliers. Once I checked the statistics of the data and verified that there were no extreme or missing values to deal with, I then performed an exploratory data analysis. In this exploratory data analysis, I initially conducted a univariate analysis of the outcome variable of this data set. Since the outcome variable is “A.I. useful”, I determined the count and percent of “A.I. Useful” in the data set given. After tabulating and graphing the outcome variable in the univariate analysis, I then conducted a bivariate analysis between the outcome variable and the other variables in the data set. In this bivariate analysis,

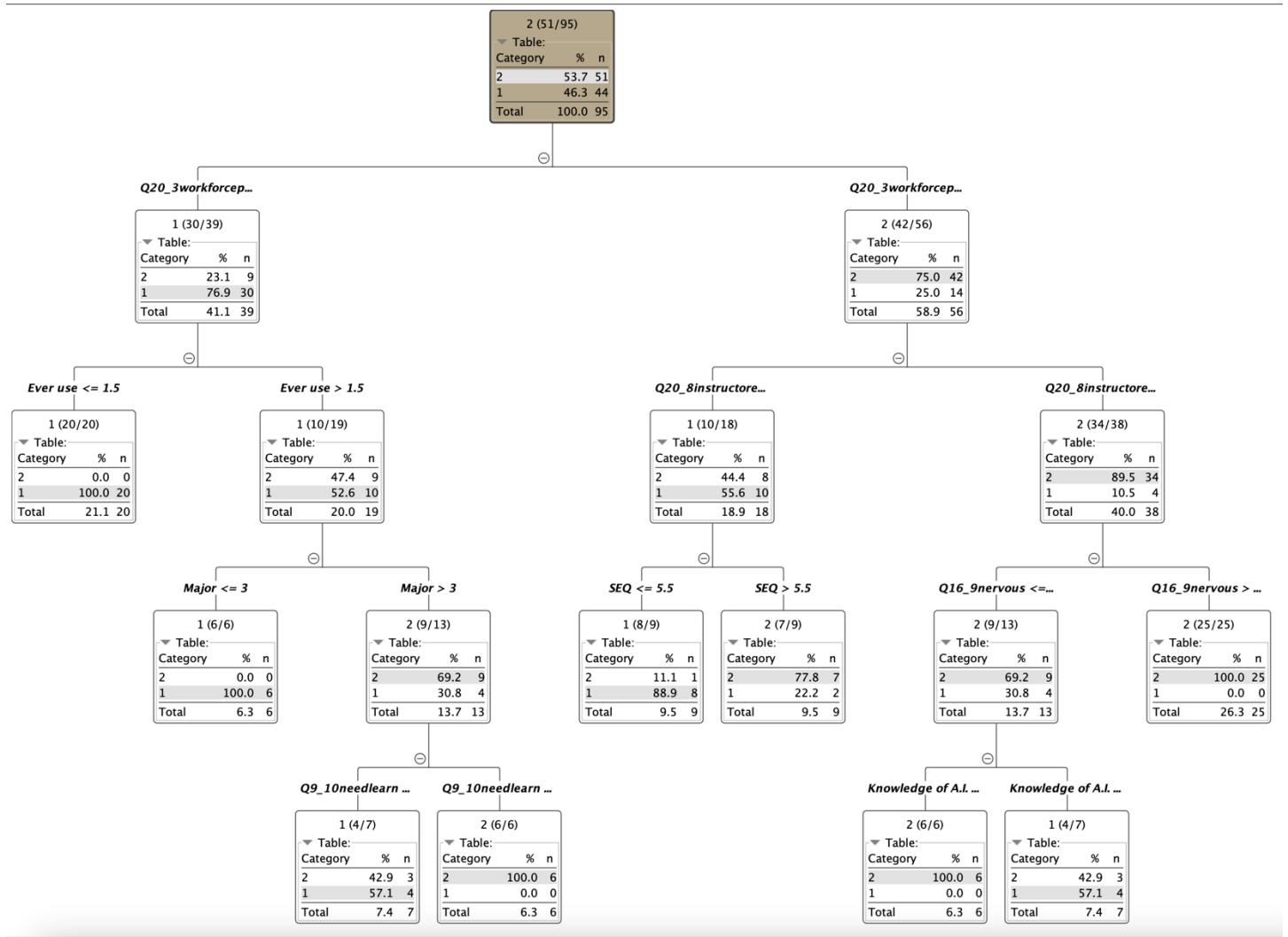
I initially made a correlation matrix with conditional formatting to determine if there were any positive or negative correlations between the outcome variable and the other variables given. Once I found positive and negative correlations, I then compared these correlative variables to the outcome variable by creating pie graphs and tabulating the numbers in an Excel pivot table. Since all the highest correlating variables were categorical, pie charts and pivot tables were used for all methods of comparison. When comparing categorical variables to the outcome categorical variable, I made pie charts with percentages showing whether a student believes A.I. is useful or not.

I will continue to conduct exploratory data analysis using KNIME and Tableau. I will build a classification model to predict A.I. Useful.

# MODEL BUILDING (OR IN-DEPTH EXPLORATORY DATA ANALYSIS UNDERSTANDING IF DOING EDA FOR PROJECT)

## ANALYSIS OUTPUT

### Model 1: Decision Tree



Accuracy statistics - 3:7 - Scorer

File Edit Hilite Navigation View

Table "default" - Rows: 3 Spec - Columns: 11 Properties Flow Variables

Row ID	TrueP...	FalseP...	TrueN...	False...	Recall	Precisi...	Sensiti...	Specifi...	F-me...	Accur...	Cohen...
2	9	10	13	10	0.474	0.474	0.474	0.565	0.474	?	?
1	13	10	9	10	0.565	0.565	0.565	0.474	0.565	?	?
<b>Overall</b>	?	?	?	?	?	?	?	?	?	0.524	0.039

## Model 2: Logistic Regression Model with ALL variables excluding constants

### Accuracy Stats:

Row ID	TrueP...	FalseP...	TrueN...	False...	Recall	Precisi...	Sensiti...	Specifi...	F-me...	Accur...	Cohen...
2	12	8	15	7	0.632	0.6	0.632	0.652	0.615	?	?
1	15	7	12	8	0.652	0.682	0.652	0.632	0.667	?	?
Overall	?	?	?	?	?	?	?	?	?	0.643	0.282

### Confusion Matrix:

Confusion Matrix - 3:16 - Scorer

File	Hilite
A.I. Useful ...	2   1
2	12   7
1	8   15

### Coefficients and Statistics:

Table "Coefficients and Statistics" - Rows: 87 Sp

Row ID	S	Logit	S	Variable	D	Coeff.	D	Std. Err.	D	z-score	D	P> z
Row1	2			Duration	-0.272	36,829.772	-0	1				
Row2	2			Age	-0.227	50,533.744	-0	1				
Row3	2			Gender	-0.691	12,162.052	-0	1				
Row4	2			Academics	0.207	18,799.578	0	1				
Row5	2			Major	4.835	11,467.654	0	1				
Row6	2			GPA	-10.789	33,495.441	-0	1				
Row7	2			A.I. famili...	3.092	42,384.681	0	1				
Row8	2			Knowledg...	-5.817	40,613.729	-0	1				
Row9	2			Q9_1Woul...	-3.274	17,865.7	-0	1				
Row10	2			Q9_2Com...	5.18	37,920.281	0	1				
Row11	2			Q9_3Easy	9.947	37,357.563	0	1				
Row12	2			Q9_4Nee...	-3.203	9,134.757	-0	1				
Row13	2			Q9_5Integ...	-5.452	26,951.052	-0	1				
Row14	2			Q9_6Inco...	0.305	26,709.753	0	1				
Row15	2			Q9_7learn...	1.393	15,432.818	0	1				
Row16	2			Q9_8cum...	3.005	43,480.135	0	1				
Row17	2			Q9_9feel...	0.935	20,826.858	0	1				
Row18	2			Q9_10nee...	-0.763	31,459.772	-0	1				
Row19	2			Number o...	-1.399	44,383.125	-0	1				
Row20	2			Grade cha...	-4.9	12,744.282	-0	1				
Row21	2			Ever use	6.428	12,642.715	0.001	1				
Row22	2			Peers	5.089	5,691.701	0.001	0.999				
Row23	2			Q14_1sol...	3.109	22,853.404	0	1				
Row24	2			Q14_11o...	-3.474	10,023.583	-0	1				
Row25	2			Q14_13sti...	-3.042	26,236.923	-0	1				
Row26	2			Q14_14u...	-5.745	11,807.179	-0	1				
Row27	2			Q14_12re...	0.505	28,971.849	0	1				
Row28	2			Q14_4inv...	-6.123	16,626.194	-0	1				
Row29	2			Q14_5re...	-2.101	34,013.47	-0	1				
Row30	2			Q14_6fin...	-1.837	13,847.897	-0	1				
Row31	2			Q14_7thin...	1.767	30,310.747	0	1				
Row32	2			Q14_8han...	-0.145	14,739.224	-0	1				
Row33	2			A.I. Conce...	5.856	11,948.414	0	1				
Row34	2			A.I. Conce...	-3.698	18,896.74	-0	1				
Row35	2			A.I. Conce...	0.96	28,990.931	0	1				
Row36	2			A.I. Conce...	0.483	16,848.657	0	1				
Row37	2			A.I. Conce...	-1.08	16,742.473	-0	1				
Row38	2			Q16_1res...	-2.229	17,617.032	-0	1				
Row39	2			Q16_2tru...	0.839	10,884.684	0	1				
Row40	2			Q16_3laza...	2.39	15,474.486	0	1				
Row41	2			Q16_4rel...	-0.735	20,413.267	-0	1				
Row42	2			Q16_5not...	0.443	18,278.325	0	1				
Row43	2			Q16_6out...	-2.412	11,693.601	-0	1				
Row44	2			Q16_7fin...	6.384	7,816.053	0.001	0.999				
Row45	2			Q16_8tho...	2.294	18,511.282	0	1				
Row46	2			Q16_9ner...	4.158	12,923.144	0	1				
Row47	2			Q16_10i...	3.48	7,502.047	0	1				
Row48	2			Time	5.799	18,795.695	0	1				
Row49	2			Q20_1che...	-5.726	11,785.017	-0	1				
Row50	2			Q20_2hig...	0.904	6,369.574	0	1				
Row51	2			Q20_3wor...	2.866	8,336.376	0	1				
Row52	2			Q20_4pla...	-2.651	21,411.072	-0	1				
Row53	2			Q20_5ba...	0.22	10,085.417	0	1				
Row54	2			Q20_6tau...	0.788	7,667.078	0	1				
Row55	2			Q20_7inst...	2.61	12,270.696	0	1				
Row56	2			Q20_8inst...	7.026	11,832.291	0.001	1				
Row57	2			Q20_9noc...	-6.987	22,342.014	-0	1				
Row58	2			Q20_10d...	3.407	22,901.832	0	1				
Row59	2			Q20_11re...	2.201	17,688.634	0	1				
Row60	2			Q20_12ti...	1.255	7,642.523	0	1				
Row61	2			SEQ	5.186	20,004.393	0	1				
Row62	2			Traditiona...	-0.033	21,863.822	-0	1				
Row63	2			Online Stu...	-3.5	15,018.928	-0	1				
Row64	2			A.P. Classes	1.07	19,545.378	0	1				
Row65	2			Dual Enrol...	-0.188	7,267.831	-0	1				
Row66	2			Comm. Co...	3.79	11,697.271	0	1				
Row67	2			4 year ins...	-2.557	26,387.007	-0	1				
Row68	2			first-gene...	-3.87	11,205.079	-0	1				
Row69	2			gap year	7.456	17,844.292	0	1				
Row70	2			internatio...	-1.664	12,499.354	-0	1				
Row71	2			Hometow...	3.853	13,893.276	0	1				
Row72	2			part-time ...	-5.647	10,604.965	-0.001	1				
Row73	2			full-time ...	-2.104	18,078.839	-0	1				
Row74	2			commuter...	4.091	18,164.611	0	1				
Row75	2			Hu- None	-4.188	7,036.284	-0.001	1				
Row76	2			Hu- Time	-2.179	18,516.545	-0	1				
Row77	2			Hu- Know...	-2.767	5,883.033	-0	1				
Row78	2			Hu- Support	-7.48	9,278.869	-0.001	0.999				
Row79	2			Hu-Fear	-3.14	8,244.44	-0	1				
Row80	2			Hu-Interest	-0.3	14,591.06	-0	1				
Row81	2			Hu- Creat...	2.132	23,885.275	0	1				
Row82	2			Hu- Other	2.291	12,345.366	0	1				
Row83	2			Use-Plaga...	3.66	10,228.523	0	1				
Row84	2			Use-Chat...	-1.819	13,915.305	-0	1				
Row85	2			Use-Insta...	-1.6	9,068.941	-0	1				
Row86	2			Use-Exam...	-2.477	8,802.431	-0	1				
Row87	2			Constant	-1.117	31,992.104	-0	1				

Model 3: Logistic Regression Model excluding Duration, Finished, Agreement, Age Academics, Q9\_6Inconsistency, Q14\_8handleway, Q16\_5notartistic, Q20\_5banned, Traditional Student, and Dual Enrollment.

Accuracy Stats:

Table "default" - Rows: 3 Spec - Columns: 11 Properties Flow Variables												
Row ID	TrueP...	FalseP...	TrueN...	False...	Recall	Precisi...	Sensiti...	Specifi...	F-me...	Accur...	Cohen...	
2	14	6	17	5	0.737	0.7	0.737	0.739	0.718	?	?	
1	17	5	14	6	0.739	0.773	0.739	0.737	0.756	?	?	
Overall	?	?	?	?	?	?	?	?	?	0.738	0.474	

Confusion Matrix:

Confusion Matrix - 3:23 - Scorer		
File	Hilite	
A.I. Useful ...	2	1
2	14	5
1	6	17

Coefficients and Statistics:

Row ID	S	Logit	S	Variable	D	Coeff.	D	Std. Err.	D	z-score	D	P> z
Row1	2			Gender	-0.326	2,167.287	-0	1				
Row2	2			Major	1.297	1,858.73	0.001	0.999				
Row3	2			GPA	-4.096	2,665.948	-0.002	0.999				
Row4	2			A.I. famili...	1.604	3,125.196	0.001	1				
Row5	2			Knowledg...	-1.872	4,191.386	-0	1				
Row6	2			Q9_1Woul...	-1.268	2,667.176	-0	1				
Row7	2			Q9_2Com...	1.855	3,308.995	0.001	1				
Row8	2			Q9_3Easy	3.7	2,086.774	0.002	0.999				
Row9	2			Q9_4Nee...	-0.886	1,362.208	-0.001	0.999				
Row10	2			Q9_5Integ...	-2.96	1,590.493	-0.002	0.999				
Row11	2			Q9_7learn...	1.594	2,059.368	0.001	0.999				
Row12	2			Q9_8cum...	1.585	2,649.999	0.001	1				
Row13	2			Q9_9feelic...	0.879	1,266.405	0.001	0.999				
Row14	2			Q9_10nee...	-0.005	2,025.093	-0	1				
Row15	2			Number o...	-0.196	4,424.539	-0	1				
Row16	2			Grade cha...	-1.482	2,653.856	-0.001	1				
Row17	2			Ever use	3.025	2,657.695	0.001	0.999				
Row18	2			Peers	2.664	1,222.634	0.002	0.998				
Row19	2			Q14_1sol...	1.681	3,173.965	0.001	1				
Row20	2			Q14_11o...	-0.809	1,710.277	-0	1				
Row21	2			Q14_13sti...	-1.277	3,051.117	-0	1				
Row22	2			Q14_14u...	-2.098	2,634.528	-0.001	0.999				
Row23	2			Q14_12re...	0.689	2,559.617	0	1				
Row24	2			Q14_4inv...	-2.031	3,782.654	-0.001	1				
Row25	2			Q14_5re...	-0.643	2,594.754	-0	1				
Row26	2			Q14_6fin...	-0.773	2,452.127	-0	1				
Row27	2			Q14_7thin...	0.317	3,126.292	0	1				
Row28	2			A.I. Conce...	2.663	1,771.091	0.002	0.999				
Row29	2			A.I. Conce...	-0.642	1,303.756	-0	1				
Row30	2			A.I. Conce...	0.859	2,353.808	0	1				
Row31	2			A.I. Conce...	-0.152	1,979.228	-0	1				
Row32	2			A.I. Conce...	-0.978	1,625.349	-0.001	1				
Row33	2			Q16_1res...	-1.261	3,053.73	-0	1				
Row34	2			Q16_2tru...	0.663	3,228.182	0	1				
Row35	2			Q16_3lazy	0.726	3,049.075	0	1				
Row36	2			Q16_4rel...	-0.174	4,251.196	-0	1				
Row37	2			Q16_6out...	-0.711	1,457.028	-0	1				
Row38	2			Q16_7fin...	2.777	1,059.31	0.003	0.998				
Row39	2			Q16_8tho...	1.573	4,227.962	0	1				
Row40	2			Q16_9ner...	1.858	3,833.143	0	1				
Row41	2			Q16_10i...	1.217	1,185.12	0.001	0.999				
Row42	2			Time	2.371	1,728.323	0.001	0.999				
Row43	2			Q20_1che...	-2.361	3,678.842	-0.001	0.999				
Row44	2			Q20_2hig...	0.916	2,675.107	0	1				
Row45	2			Q20_3wor...	1.404	3,837.487	0	1				
Row46	2			Q20_4pla...	-1.297	2,344.455	-0.001	1				
Row47	2			Q20_6tau...	1.451	4,254.672	0	1				
Row48	2			Q20_7inst...	1.11	2,732.908	0	1				
Row49	2			Q20_8inst...	3.613	1,732.58	0.002	0.998				
Row50	2			Q20_9noc...	-3.032	2,240.026	-0.001	0.999				
Row51	2			Q20_10d...	0.737	4,331.963	0	1				
Row52	2			Q20_11re...	1.316	1,835.58	0.001	0.999				
Row53	2			Q20_12ti...	0.897	805.678	0.001	0.999				
Row54	2			SEQ	2.158	3,049.397	0.001	0.999				
Row55	2			Online Stu...	-1.285	2,782.494	-0	1				
Row56	2			A.P. Classes	1.162	1,688.883	0.001	0.999				
Row57	2			Comm. Co...	0.981	2,038.351	0	1				
Row58	2			4 year ins...	-1.253	4,495.654	-0	1				
Row59	2			first-gene...	-1.005	2,332.727	-0	1				
Row60	2			gap year	2.335	3,045.454	0.001	0.999				
Row61	2			internatio...	-0.609	1,966.438	-0	1				
Row62	2			Hometow...	2.115	3,596.697	0.001	1				
Row63	2			part-time ...	-2.001	1,100.495	-0.002	0.999				
Row64	2			full-time ...	-0.538	1,708.041	-0	1				
Row65	2			commuter...	1.588	2,666.117	0.001	1				
Row66	2			Hu- None	-0.734	1,041.827	-0.001	0.999				
Row67	2			Hu- Time	-0.196	1,567.194	-0	1				
Row68	2			Hu- Know...	-1.431	2,401.356	-0.001	1				
Row69	2			Hu- Support	-3.574	1,150.958	-0.003	0.998				
Row70	2			Hu-Fear	-0.999	2,015.645	-0	1				
Row71	2			Hu-Interest	0.14	2,212.606	0	1				
Row72	2			Hu- Creat...	0.629	681.966	0.001	0.999				
Row73	2			Hu- Other	0.204	1,566.525	0	1				
Row74	2			Use-Plaga...	1.654	868.956	0.002	0.998				
Row75	2			Use-Chat...	-0.315	1,712.976	-0	1				
Row76	2			Use-Insta...	-0.194	2,452.758	-0	1				
Row77	2			Use-Exam...	-0.993	1,231.441	-0.001	0.999				
Row78	2			Constant	1.173	1,143.119	0.001	0.999				

## DISCUSSION OF RESULTS

For this data analysis project, I built three classification models to not only determine the most influential variables on the use of A.I. but to predict students that are most likely to believe A.I. is useful. For my initial classification model, I built a decision tree model in KNIME using all variables (Model 1). After partitioning the data into a training set (70%) and a validation set (30%), A.I. useful was set as the class column with a minimum of five records per node. Once the decision tree was built, the accuracy statistics were measured. For the decision tree model, the accuracy was 52.4% and recall was 47.4%. The model was only able to predict correctly 52.4% of the time and had a low true positive rate of 47.4%. In addition, the decision tree model has incorrectly classified 7 students as not believing A.I. was useful when they did believe A.I. was useful (False Negative). Since accuracy and recall were low and false negatives were high, a logistic regression model was tested next.

For the first logistic regression model tested (Model 2), all predictor variables, excluding constants were included in model building and analysis. Data was partitioned into a training set (70%) and a validation set (30%) and A.I. useful was set as the target column. Once the logistic regression model was built, the accuracy and coefficient statistics were measured and compared to the decision tree model. In the logistic regression model, the accuracy was 64.3% and the recall was 63.2%. Since both accuracy and recall in this logistic regression model are higher than accuracy and recall in the decision tree model, this logistic regression model is better at predicting students' belief of A.I. usefulness. In addition to higher accuracy and recall, the logistic regression model had the same number of false negatives as the decision tree model- 7. After comparing accuracy, recall, and false negatives, the coefficients of each variable were compared to determine variables that are good predictors of students' belief of A.I. usefulness. Variables with high magnitudes of coefficients, i.e., good predictors of A.I. useful, included **Q9\_3Easy**, **gap year**, **Q20\_8instructorsencourage**, **ever use**, **GPA**, **Hu-Support**, **Q20\_9nocreativity**, and **Q14\_4investeffort**. Variables with low-magnitude of coefficients included, **Academics**, **Q20\_5banned**, **Q9\_6Inconsistency**, **Q16\_5notartistic**, **Traditional Students**, **Q14\_8handleway**, **Dual Enrollment**, and **Age**. Since these variables had a low magnitude of coefficients, they are not good predictors of A.I. useful and can be removed from the classification model building.

For the last logistic regression model tested (Model 3), I removed the variables with a low magnitude of coefficient and re-ran the logistic regression model. The accuracy and coefficient statistics were measured and then compared to the previous logistic regression model to determine if the removal of these variables would result in a better model at predicting the belief of A.I. useful. In this logistic regression model, accuracy was measured to be 73.8% while recall was measured to be 73.7%. In this model, both accuracy and recall were higher than the previous two models tested which means that this model is a better model at predicting A.I. useful. In addition, the model incorrectly classified 5 students as believing A.I. is useful when they do not believe A.I. is useful which is lower than the other two models tested. When comparing accuracy, recall, and false negatives, it is determined that this model (Model 3) is the best model at predicting A.I. useful since it has the highest accuracy and recall rate and lowest occurrence of false negatives. The variables with the highest magnitudes of coefficients included **Q9\_3Easy**, **Q20\_8instructorsencourage**, **ever use**, **Q16\_7findfault**, **GPA**, **Hu-Support**, **Q20\_9nocreativity**, and **Q9\_5Integrated**. Since these variables had the highest magnitude of coefficients, they are good predictors of A.I. useful.

## SUMMARY OF FINDINGS

1. In the data set collected, approximately 48.91% of students believe that A.I. is useful while 51.09% of students do not believe A.I. is useful.
2. In comparing A.I. useful to different predictor variables, there appears to be a negative correlation between the outcome variables of A.I. useful and the predictor variables of **Would like to use, cheaters, banned, no\_creativity, and plagiarism.**
3. In comparing A.I. useful to different predictor variables, there appears to be a positive correlation between the outcome variable of A.I. useful and the predictor variables of **ever use, instructors\_encourage, workforce\_prepared, grade\_change, and instructor\_use.**
4. For students who had ever used A.I. before , 88.37% of individuals believe A.I. is useful while 11.63% do not think A.I. is useful. For students who have not used A.I. previously, 30.85 % of individuals believe A.I. is useful while 69.15% of them do not believe A.I. is useful. Students who have previously used A.I. in the past are far more likely to believe that A.I. is useful than those who have not used A.I.
5. For those who rated “would like to use A.I.” as a “5”, or Strongly Agree, 100% of respondents believed A.I. is useful. For those who rated “would like to use A.I.” as a “1”, or strongly disagree, 25% of respondents believe A.I. is useful while 75% believe A.I. is not useful. As agreeableness to “would like to use” is stronger, students are more likely to believe that A.I. is useful. Students who would like to use A.I. are more likely to believe that A.I. is useful.
6. For students that believe instructors should encourage students to use A.I., 68.49% of individuals also believe A.I. is useful while 31.51% do not think A.I. is useful. In contrast, 26.56% of individuals who do not believe instructors should encourage students to use A.I. also believe A.I. is useful while 73.44% of them do not believe A.I. is useful. Students are more likely to believe A.I. is useful if they also believe that instructors should encourage students to use A.I.
7. For students who believe that individuals who use A.I. are cheaters, 22% of respondents believe A.I. is useful while 78% do not think A.I. is useful. In contrast, 64.37% of individuals who do not consider using A.I. to be cheating, believe A.I. is useful while 35.63% of them do not believe A.I. is useful. A.I. is more useful for those who do not believe using A.I. is cheating.
8. For students who believe that A.I. should be banned in schools, 14.29% of individuals believe A.I. is useful while 85.71% do not think A.I. is useful. In contrast, 60.78% of individuals who do not think A.I. should be banned in schools also believe A.I. is useful while 39.22% of them do not believe A.I. is useful. Students are more likely to believe A.I. is useful if they believe that A.I. should not be banned in schools.
9. When building a classification model to predict if students believe A.I. is useful, it appears that Model 3 is the best model since it has the highest accuracy and recall and has the lowest occurrence of false



negatives. (Model 3 excludes Duration, Finished, Agreement, Age Academics, Q9\_6Inconsistency, Q14\_8handleway, Q16\_5notartistic, Q20\_5banned, Traditional Student, and Dual Enrollment.

## PART 6

# EVALUATION AND DEPLOYMENT

### APPLICATION OF RESULTS TO BUSINESS PROBLEMS

The purpose of this data analysis was to determine the variables that cause students to believe that A.I. is useful in higher education and to build a classification model that would accurately predict the opinion of other students regarding their beliefs towards A.I.. By determining these variables, educational institutions can determine how they will or will not begin incorporating A.I. into classwork without risking the overall development of a student's educational journey. Additionally, by determining these variables, university employees can improve processes and customize learning tactics to fit the needs of the actual student population at the B.I. Moody III College of Business Administration.

In this data analysis project, it was determined through a classification model that the following variables are important for predicting beliefs of A.I. usefulness.

Ever Used	A.I. is easy to use
Would like to use	GPA
Instructors_Encourage	Hurdles- Support
Cheaters	A.I. does not allow for creativity
Banned	A.I. is well-integrated

For higher educational institutions to successfully incorporate A.I. into their organizations, it is important to focus on variables within control. Some of these variables include Instructors\_Encourage, banned, Hurdles-Support, A.I. is easy to use, and cheaters. For example, in this analysis project, it was determined that students who do not believe A.I. is useful also believe that one of their biggest hurdles with using A.I. is adequate support. Combining the Support variable with the results of the Instructors\_Encourage variable, instructors should increase their support and encouragement for A.I. in the classroom for students to believe that A.I. is more useful. In another example, it was determined that students who believe that A.I. use is considered cheating also believe that A.I. is not useful. Institutions must teach students methods of using A.I. that further their academic development rather than methods that encourage students to “cheat” in classes. Teaching students how to effectively use A.I. software will also increase the number of students who believe A.I. is easy to use, therefore increasing the number who believe A.I. is useful. Institutions should also not ban A.I. in the classroom and usefulness is not applicable if A.I. software is banned. Instructors should also teach students how they can use A.I. and still be creative in developing their thoughts and ideas such as using A.I. as a new search engine or idea development platform. Some variables that are not within organizational control but are still important for determining beliefs of A.I. usefulness include ever used, would like to use, GPA, and A.I. being well-integrated.



## RECOMMENDED ACTIONS

Below is a list with several recommendations that can be taken by higher educational institutions to increase the number of students who believe A.I. is useful.

1. Education and Awareness (Based on variables would like to use, instructors\_encourage, support, A.I. is easy to use, banned, and cheaters)
  - a. Curriculum Integration (Primarily based on instructors encourage, banned, A.I. is easy to use, cheaters, and support)
    - i. Incorporate A.I. topics into discussions- Can help students understand the basic principles, concepts, applications, and potential benefits of A.I.
  - b. Guest Speakers and Workshops (Primarily based on instructors encourage, support, would like to use, and banned)
    - i. Invite professionals to lead discussions on how A.I. is being used in specific fields and guide exercises in which A.I. is used as a tool in said professional fields. EX: Have a banker speak to a class about how A.I. is used for fraud detection, forecasting, or customer service.
2. Hands-On Experience (Based on variables ever used, would like to use, and A.I. does not allow for creativity)
  - a. Coding and Programming (Primarily based on variables ever used and would like to use)
    - i. Encourage students to learn basic programming languages and skills that will be used in their fields and how A.I. is changing the processes.
  - b. A.I. Projects (Primarily based on variables ever used, would like to use, and A.I. does not allow for creativity)
    - i. Assign students to complete a project using and not using A.I. to compare the pros and cons of different software. EX: Have students write a few paragraphs on a topic in the classroom then have them use chatbots to write paragraphs on the same topic and discuss results.
    - ii. Have students use A.I. as a prompt method to begin ideas and then require their creativity to continue the finished product. Encourage students to use A.I. as a new form of search engine to create a model base.
3. Showcase Real-World Impact ( Based on variables A.I. does not allow for creativity and banned)
  - a. Case Studies (Primarily based on variables A.I. does not allow for creativity and banned)
    - i. Share studies and success store of A.I. applications making a positive impact on various industries within business such as management, marketing, economics, finance, or accounting.
  - b. News and Media (Primarily based on variables A.I. does not allow for creativity and banned)
    - i. Present positive A.I. news developments showcasing instances where A.I. has improved efficiency, solved complex problems, or contributed to advancements. EX: The New York Times recently published an article based on how A.I. can be a classroom tool. Article link: <https://www.nytimes.com/2023/09/10/business/ai-learning-classrooms.html>
4. Interactive Learning (Based on variables ever used, would like to use, instructors\_encourage, and support)
  - a. Interactive Platforms (Primarily based on variables ever used, would like to use, instructors\_encourage, and support)

- i. Use interactive platforms and online resources that gamify learning about A.I. such as Khanmigo, ArtBot, Minecraft Education Edition: Hour of Code, Semi-Conductor, Thing Translator, or Tynker.
  - b. A.I. Competitions (Primarily based on variables would like to use, instructors\_ encourage, and support)
    - i. Competitions provide practical experience for students to learn A.I. use in their projected fields and can foster a sense of accomplishment. EX: Alexa Prize competition is a series for university students to compete with other students around the world to advance several areas of A.I. through generalizable methodologies.
- 5. Industry Collaboration ( Based on instructors\_ encourage, cheaters, and banned)
  - a. Partnerships (Primarily based on instructors\_ encourage, cheaters, and banned)
    - i. Develop and foster partnerships with A.I. companies and research institutions to increase students' exposure to A.I. projects and professionals in their field.
  - b. Internships and Shadowing (Primarily based on instructors\_ encourage, cheaters, and banned)
    - i. Facilitate opportunities for students to engage with professionals who use A.I. in their professional duties.
- 6. A.I. Across Disciplines (Based on A.I. does not allow for creativity)
  - a. Interdisciplinary Approach (Primarily based on A.I. does not allow for creativity)
    - i. Demonstrate to students how A.I. is applicable across various disciplines, from business to science and technology to arts and the humanities Showcase A.I. versatility and incorporate how A.I. can further creativity.
- 7. Interactive Events and Exhibitions (Based on variables would like to use, instructors\_ encourage, and support)
  - a. A.I. Expos (Primarily based on variables would like to use, instructors\_ encourage, and support)
    - i. Organize events or exhibitions showing students' projects, innovations, and applications of A.I..

# CONCLUSION

## FINAL SUMMARY

With the recent popularity of A.I. in all industries, there is a need among higher educational institutions to understand how and when to incorporate A.I. into courses based on the needs and opinions of current and future students. Examining how students perceive A.I. to be useful can better help make these decisions. Once higher educational institutions are aware of useful factors, they can form a cohesive plan most efficiently. In this analysis project, ninety different variables were analyzed to determine if they are good predictors of A.I. usefulness or not. Through a bivariate analysis and prediction model building, ten variables were found to be good predictors of A.I. usefulness. These variables include, ever used, would like to use, instructors encourage, cheaters, banned, A.I. is easy to use, GPA, Hurdles-Support, A.I. does not allow for creativity, and A.I. is well-integrated. While some variables are not within institutional control (i.e., GPA and A.I. is well-integrated), other variables are and can be improved upon to increase students' perceived value of A.I. usefulness. By focusing on these variables to improve students' perception within their classes, higher educational institutions can adapt to incorporate A.I. into coursework by fitting the wants and needs of current students and staying competitive with institutions nationwide. With the current growth rates of A.I. being used in all industries, institutions must find useful ways to incorporate artificial intelligence, or they will fail students in preparing them for the current workforce environment.

## REFERENCES AND ACKNOWLEDGMENTS

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