

Holland's RIASEC model as an integrative framework for individual differences in career interest

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What is Holland RIASEC model as an integrated framework for individual career choosing?

- 1.American Psychologist John Holland had developed the RIASEC model for analysing the individual interest over career choosing based on the individual personality type.
- 2.Holland initially labelled and categorized human personality into six broader types as, “motoric, intellectual, esthetic, supportive, persuasive and conforming”.
- 3.Later he changed to Realistic(Doers),Investigative(Thinkers), Artistic(Creators),Social(Helpers),Enterprising(Persuader) and Conventional(Organizers) respectively.
- 4.It is called RIASEC model as a correlation with each other by taking the initial letter of the words personality type.

Source of data and description of the subjects

The data had been collected from the survey conducted across a random group of student of age group 17-19 who are currently studying in senior secondary from two broad field science and humanities.

The main objective of the research is to determine the occupational interest of the students over their career choosing and determining how much suitable their mindset is with the current global scenario.



What are the six occupational interests?

1.Realistic(Doers):

- a. These are those people who like to work with, “things”.
- b. These people tends to be “assertive and competitive and are interested in activities requiring motor coordination, skill and strength”.
- c. Their approach to problem solving is by “doing something rather than talking and thinking about it”.
- d. They also prefer “concrete approaches to problem solving, rather than abstract theory”.
- e. Finally, their interests tend to focus on “scientific or mechanical rather than cultural and aesthetic areas”.

Example: Agriculture, Architect ,Athletics, Carpenter, Chef, Chemist ,Computer scientists, etc.

2. Investigative (Thinkers):

- a. People who prefer to work with “data”.
- b. They like to “think and observe rather than act, to organize and understand information rather than to persuade”.
- c. They also prefer “individual rather than people oriented activities”.

Example: Biostatistician, Chemist, Computer Scientists, Counselors, Financial Analyst, etc.





3.Artistic (Creators):

- a. People who like to work with "ideas and things".
- b. They tend to be "creative, open, inventive, original, perceptive, sensitive, independent and emotional".
- c. They rebel against "structure and rules", but enjoy "tasks involving people or physical skills".
- d.They tend to be more emotional than the other types.


Example : Web Developer , Graphics Designer, Beauticians, Horticulturist, Makeup Artists, Painter,etc.



4.Social (Helpers):

- a. People who like to work with "people" and who "seem to satisfy their needs in teaching or helping situations".
- b. They tend to be "drawn more to seek close relationships with other people and are less apt to want to be really intellectual or physical".

Example : Firefighter, Fitness Trainer , Customer Services , Park Naturalist, Community Worker,etc.



5. Enterprising (Persuader):

- a. People who like to work with people and data.
- b. They tend to be “good talkers, and use this skill to lead or persuade others”.
- c. They "also value reputation, power, money and status".

Example : Business Merchant, Film Producer.



6. Conventional (Traditional):

- a. People who prefer to work with data and who “like rules and regulations and emphasize self-control-they like structure and order, and dislike unstructured or unclear work and interpersonal situations”.
- b. They also “place value on reputation, power, or status”.

Example : Math's teacher, Librarian, Computer Scientist, Web developer, etc.





RIASEC



Hypothesis regarding associativity

Null Hypothesis(H_0) = The two occupational interests are independent

Alternate Hypothesis(H_1) = The two occupational interest are not independent

Chi Square Test for finding association between Realistic and other five occupational interest

	0 to 3	4 to 6	Total
Realistic	32	10	42
Investigative	25	17	42
Total	57	27	84

Chi Square without Yates correction = 0.10, Phi-coefficient: 0.05, Degree of freedom = 1, Since $X^2 < \text{Value at 5 percent level of significance}$, null hypothesis turn to be true, Realistic is not associated with Investigative

	0 to 3	4 to 6	Total
Realistic	32	10	42
Artistic	26	16	42
Total	58	26	84

Chi Square without Yates correction = 0.15, Phi-coefficient: 0.06, Degree of freedom = 1, Since $X^2 < \text{Value at 5 percent level of significance}$, null hypothesis turn to be true, Realistic is not associated with Artistic

	0 to 3	4 to 6	Total
Realistic	32	10	42
Social	28	14	42
Total	60	24	84

Chi Square without Yates correction = 0.33, Phi-coefficient: 0.09, Degree of freedom = 1, Since $X^2 < \text{Value at 5 percent level of significance}$, null hypothesis turn to be true, Realistic is not associated with Social

	0 to 3	4 to 6	Total
Realistic	32	10	42
Enterprising	11	31	42
Total	43	41	84

Chi Square without Yates correction = 19.05, Phi-coefficient: 0.68, Degree of freedom = 1, Since $X^2 > \text{Value at 1 percent level of significance}$, null hypothesis turn to be false, Realistic is associated with Enterprising

	0 to 3	4 to 6	Total
Realistic	32	10	42
Conventional	38	4	42
Total	70	14	84

Chi Square with Yates correction = 2.14, Phi-coefficient: 0.23, Degree of freedom = 1, Since $X^2 < \text{Value at 5 percent level of significance}$, null hypothesis turn to be true, Realistic is not associated with Conservative

Chi Square Test for finding associativity between Investigative and other four occupational interest

	0 to 3	4 to 6	Total
Investigative	25	17	42
Artistic	26	16	42
Total	51	33	84

Chi Square without yates correction=0.04, Phi-coefficient:0.04 Degree of freedom = 1, Since $X^2 <$ Value at 5 percent level of significance, null hypothesis turn to be true, Investigative is not associated with Artistic

	0 to 3	4 to 6	Total
Investigative	25	17	42
Social	28	14	42
Total	53	31	84

Chi Square without yates correction =0.46, Phi-coefficient:0.11 Degree of freedom = 1, Since $X^2 <$ Value at 5 percent level of significance, null hypothesis turn to be true, Investigative is not associated with Social

	0 to 3	4 to 6	Total
Investigative	25	17	42
Enterprising	11	31	42
Total	36	48	84

Chi Square without yates correction =9.52, Phi-coefficient:0.48 Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turn to be false, Investigative is associated with Enterprising

	0 to 3	4 to 6	Total
Investigative	25	17	42
Conventional	38	4	42
Total	63	21	84

Chi Square with yates correction =9.14, Phi-coefficient:0.47 Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turn to be false, Investigative is associated with Conventional

Chi Square Test for finding associativity between Artistic and other three occupational interest

	0 to 3	4 to 6	Total
Artistic	26	16	42
Social	28	14	42
Total	54	30	84

Chi Square with yates correction =0.20, Phi-coefficient:0.07 Degree of freedom = 1, Since $X^2 <$ Value at 5 percent level of significance, null hypothesis turn to be true, Artistic is not associated with Social

	0 to 3	4 to 6	Total
Artistic	26	16	42
Enterprising	11	31	42
Total	37	47	84

Chi Square with yates correction =10.86, Phi-coefficient:0.51 Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turn to be false, Artistic is associated with Enterprising

	0 to 3	4 to 6	Total
Artistic	26	16	42
Conventional	38	4	42
Total	64	20	84

Chi Square with yates correction =7.96, Phi-coefficient:0.44 Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turn to be false, Artistic is associated with Conventional

Chi Square Test for finding associativity between Social and other two occupational interest

	0 to 3	4 to 6	Total
Social	28	14	42
Enterprising	11	31	42
Total	39	45	84

Chi Square without Yates correction = 13.83, Phi-coefficient: 0.58
Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turns to be false, Social is associated with Enterprising

	0 to 3	4 to 6	Total
Social	28	14	42
Conventional	38	4	42
Total	66	18	84

Chi Square with Yates correction = 5.72, Phi-coefficient: 0.37
Degree of freedom = 1, Since $X^2 <$ Value at 1 percent level of significance, null hypothesis turns to be true, Social is not associated with Conventional

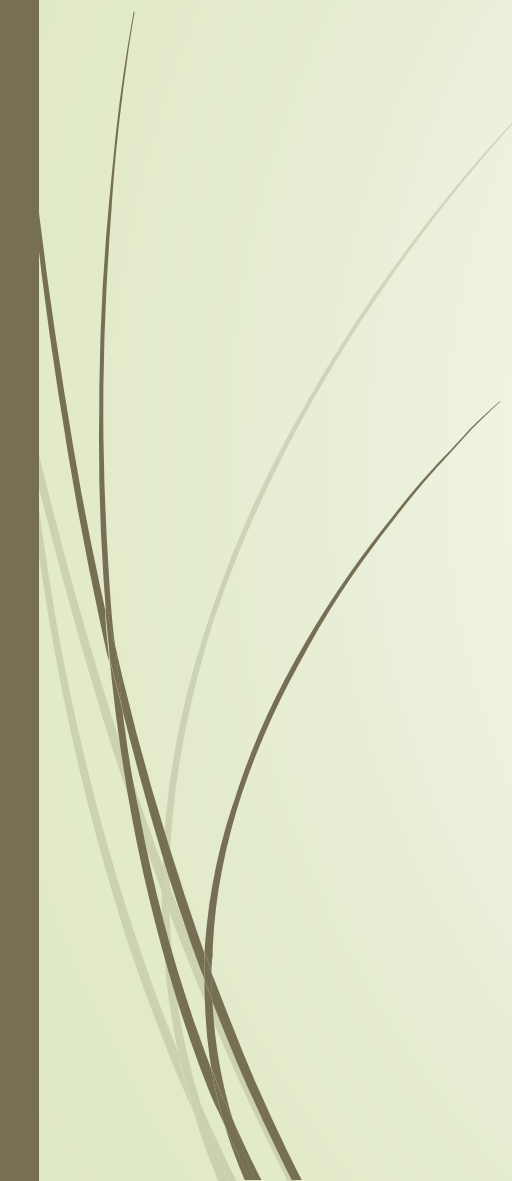
Chi Square Test for finding associativity between Enterprising and rest one occupational interest

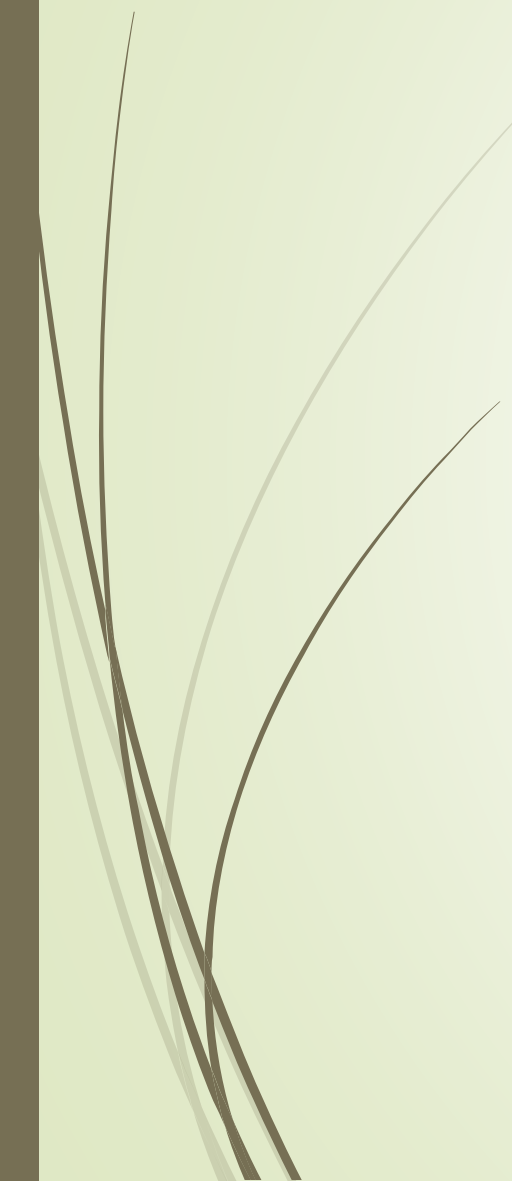

	0 to 3	4 to 6	Total
Enterprising	11	31	42
Conventional	38	4	42
Total	49	35	84

Chi Square with yates correction =33.11, Phi-coefficient:0.89,Degree of freedom = 1, Since $X^2 >$ Value at 1 percent level of significance, null hypothesis turn to be false, Enterprising is associated with Conventional



Conclusions

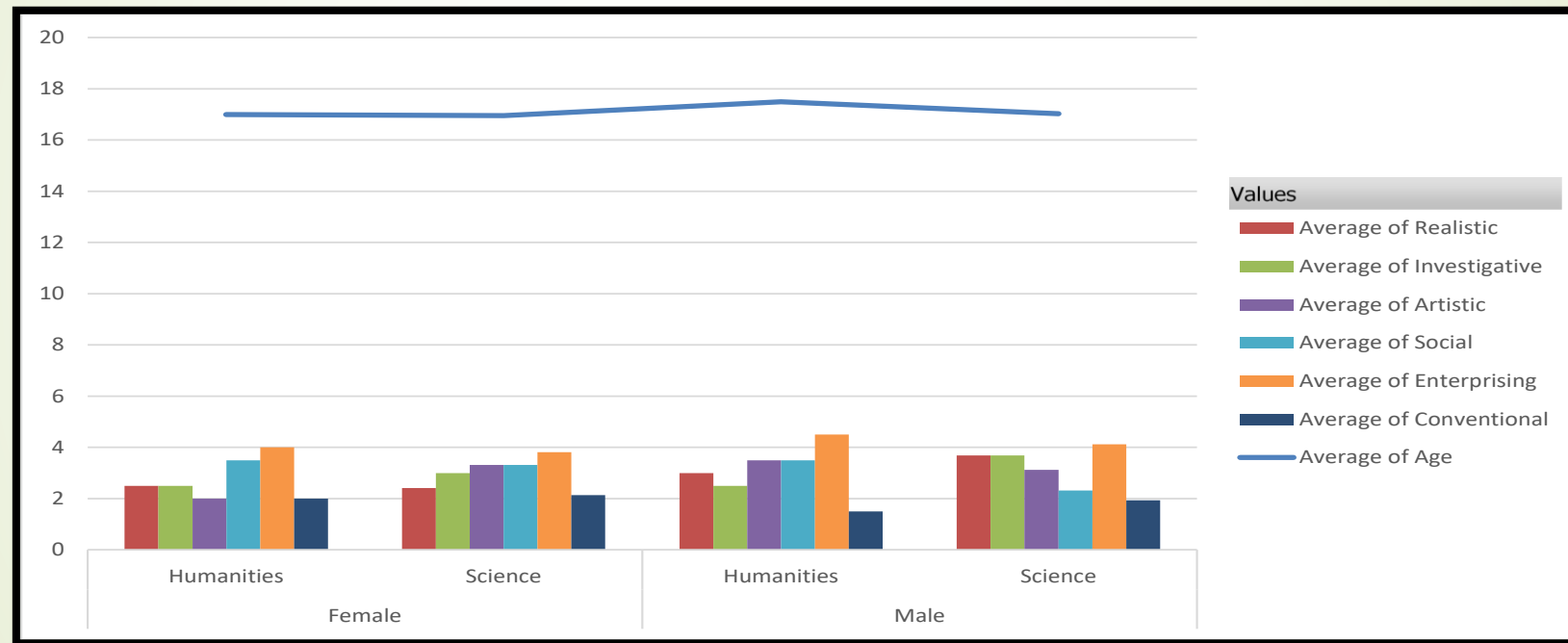
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1. Realistic is associated with Enterprising
 2. Investigative is associated with Enterprising
 3. Investigative is associated with Conventional
 4. Artistic is associated with Enterprising
 5. Artistic is associated with Conventional
 6. Social is associated with Enterprising
 7. Enterprising is associated with Conventional



	R	I	A	S	E	C
R						
I	00.10					
A	00.15	00.04				
S	00.33	00.46	00.20			
E	19.05	09.52	10.86	13.83		
C	02.14	09.14	07.96	05.72	33.11	

Correlation Matrix : Chi – Square Value
between various occupational interests

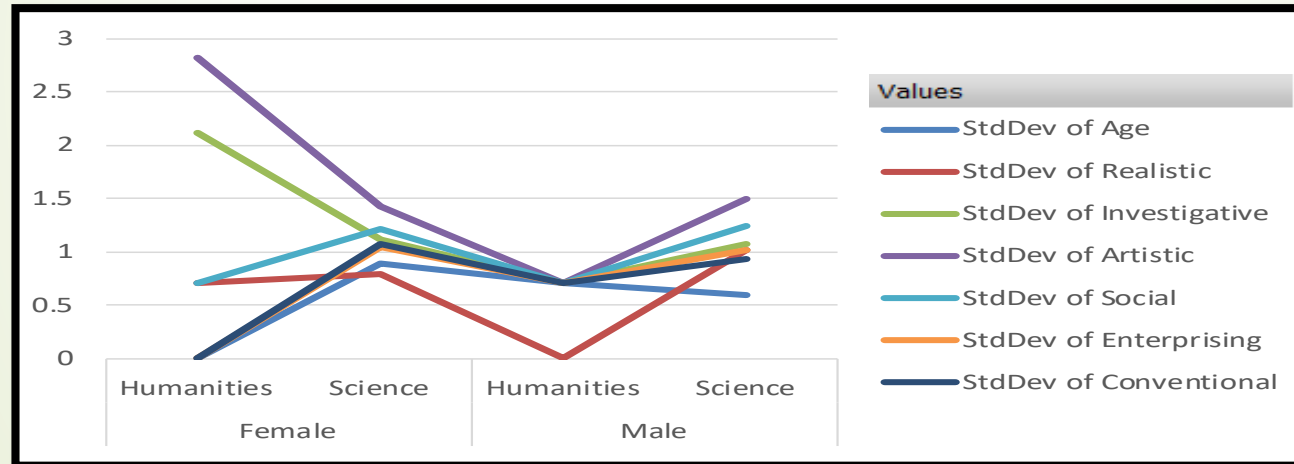
Row Labels	Average of Age	Average of Realistic	Average of Investigative	Average of Artistic	Average of Social	Average of Enterprising	Average of Conventional
Female	16.95	2.45	2.96	3.20	3.34	3.84	2.13
Humanities	17	2.5	2.5	2	3.5	4	2
Science	16.95	2.41	3	3.31	3.32	3.82	2.14
Male	17.08	3.62	3.56	3.17	2.45	4.17	1.89
Humanities	17.5	3	2.5	3.5	3.5	4.5	1.5
Science	17.03	3.68	3.69	3.13	2.32	4.13	1.94
Grand Total	17.01	2.92	3.22	3.19	2.95	3.98	2.03



Comparison of averages

The graph above compared the age with the six personality categories in comparison of their stream and sex.

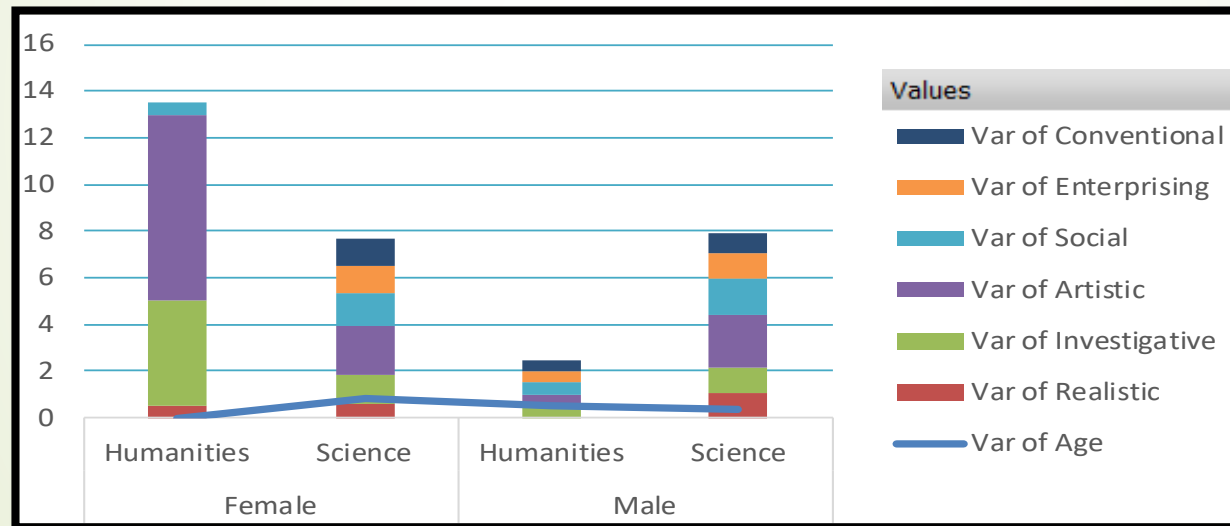
Row Labels	Std . Dev . of Age	Std . Dev . of Realistic	Std . Dev . of Investigative	Std . Dev . of Artistic	Std . Dev . of Social	Std . Dev . of Enterprising	Std . Dev . of Conventional
Female	0.86	0.78	1.16	1.53	1.17	1.00	1.03
Humanities	0	0.70	2.12	2.83	0.70	0	0
Science	0.90	0.80	1.11	1.43	1.21	1.05	1.08
Male	0.60	0.98	1.10	1.43	1.25	0.98	0.90
Humanities	0.70	0	0.70	0.71	0.71	0.71	0.70
Science	0.59	1.01	1.08	1.5	1.25	1.02	0.93
Grand Total	0.75	1.04	1.17	1.47	1.27	1.0	0.97



Comparison of standard deviation

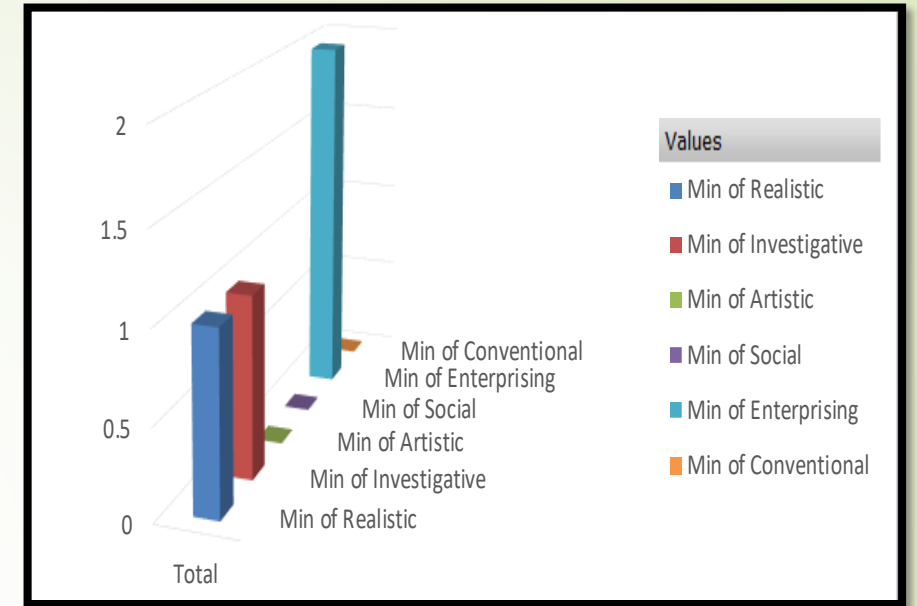
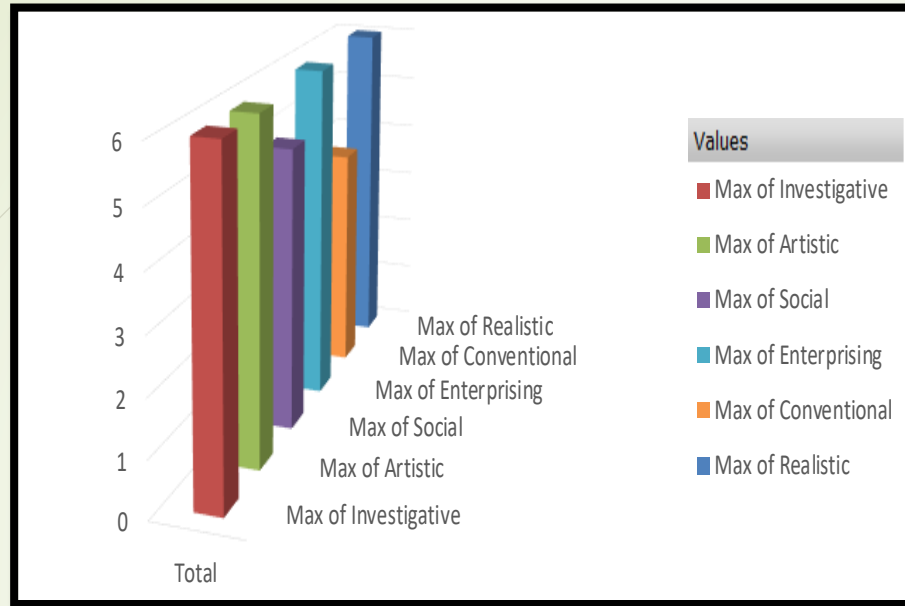
The above graph compared deviations of the personality type and the age , the most interesting feature of the deviation graph is that the male student of arts have S.D of 0.

Row Labels	Var of Age	Var of Realistic	Var of Investigative	Var of Artistic	Var of Social	Var of Enterprising	Var of Conventional
Female	0.74	0.61	1.35	2.35	1.37	1.01	1.07
Humanities	0	0.5	4.5	8	0.5	0	0
Science	0.81	0.63	1.24	2.04	1.47	1.10	1.17
Male	0.36	0.96	1.20	2.03	1.56	0.98	0.81
Humanities	0.5	0	0.5	0.5	0.5	0.5	0.5
Science	0.35	1.03	1.16	2.25	1.57	1.05	0.86
Grand Total	0.57	1.10	1.34	2.16	1.61	1.0	0.95



Comparison of variance

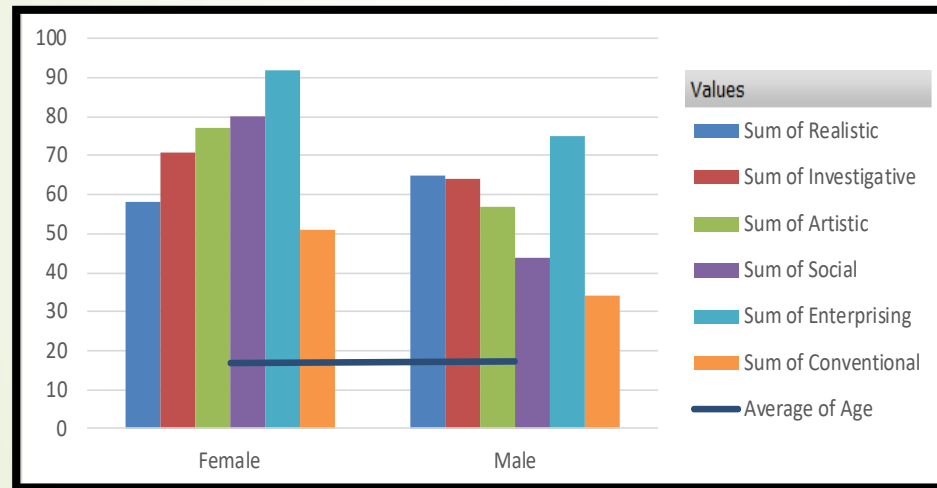
The female student of humanity have larger variance of artistic and investigative and the male student of humanity have 0 variance . Both the male and female student of science stream have almost similar variance.



Comparison of maximum and minimum

The six personality type and it had analysed the maximum and minimum of their valued and it had been found that student tends to be more artistic as their maximum value is highest and minimum value is lowest among the other five personality type.

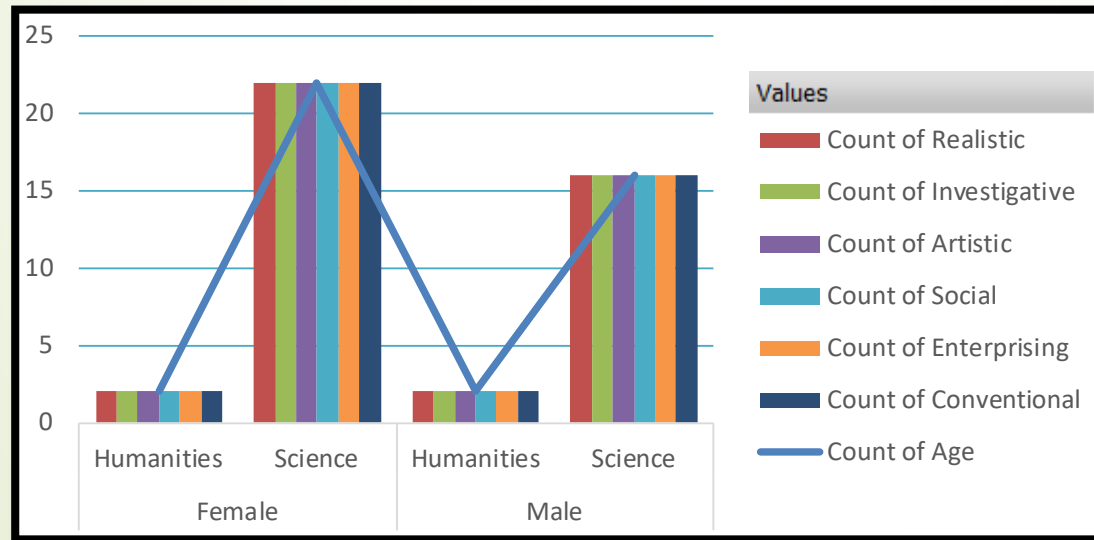
Row Labels	Sum of Realistic	Sum of Investigative	Sum of Artistic	Sum of Social	Sum of Enterprising	Sum of Conventional	Average of Age
Female	58	71	77	80	92	51	16.96
Male	65	64	57	44	75	34	17.08
Grand Total	123	135	134	124	167	85	17.01



Comparison of the summation of the personality type:

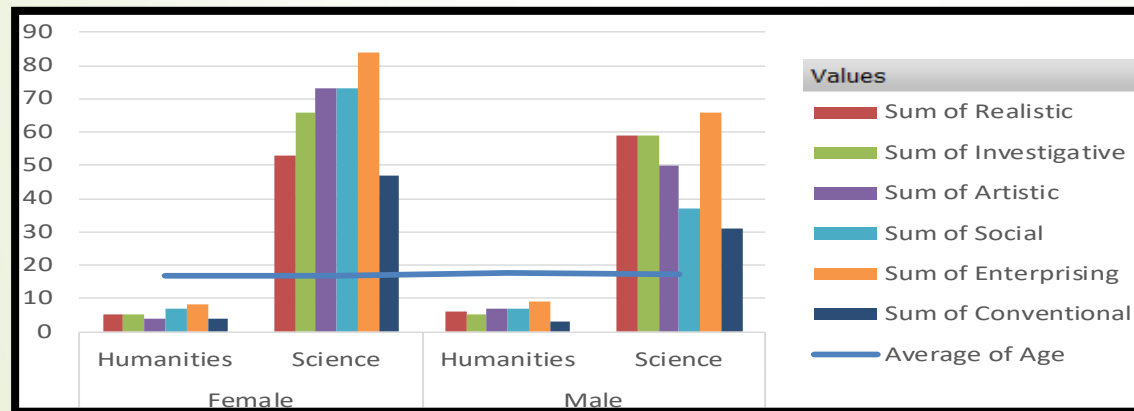
It had been found that female tends to be more enterprising and male to be least conventional

Row Labels	Count of Age	Count of Realistic	Count of Investigative	Count of Artistic	Count of Social	Count of Enterprising	Count of Conventional
Female	24	24	24	24	24	24	24
Humanities	2	2	2	2	2	2	2
Science	22	22	22	22	22	22	22
Male	18	18	18	18	18	18	18
Humanities	2	2	2	2	2	2	2
Science	16	16	16	16	16	16	16
Grand Total	42	42	42	42	42	42	42



Overall Frequency comparison of the survey group

Row Labels	Average of Age	Sum of Realistic	Sum of Investigative	Sum of Artistic	Sum of Social	Sum of Enterprising	Sum of Conventional
Female	16.96	58	71	77	80	92	51
Humanities	17	5	5	4	7	8	4
Science	16.95	53	66	73	73	84	47
Male	17.08	65	64	57	44	75	34
Humanities	17.5	6	5	7	7	9	3
Science	17.03	59	59	50	37	66	31
Grand Total	17.01	123	135	134	124	167	85



Comparison of the summation of the personality type with the average of the age

It is found that on the average of age near 18 female tends to be less realistic than male while female tends to be more investigative, artistic, social, enterprising, and conventional.



Applications of Descriptive statistics and data visualization

Data is quickly becoming a defining thing in the business world. It is the lifeblood of every company decision and thus, it defines what companies do. A company which doesn't pay attention to proper statistics can be at a serious disadvantage from companies who do, especially companies that use descriptive statistics and data visualization.

Data has to be good if a business wants to remain relevant and successful in the business world.

The first step would be to collect the data, which is quite easy in many ways. Then the gathered information needs to be analyzed and understood. But what comes after that?

Simple – descriptive data and data visualization.



Descriptive statistics

Descriptive statistics describes data – it summarizes and organizes all of the collected data into something manageable and simple to understand. The descriptions can include the entire data set or just a part of the data set.

One of the most important things to know about descriptive data analysis is that it focuses on the data instead of on the implication that can be far reaching and go beyond the represented data.

This is the main difference between inferential statistics and descriptive statistics. Inferential statistics uses complicated calculations to make predictions while descriptive statistics doesn't.

This is just the basic information you need to know about descriptive statistics, but it's worth understanding the basics before we dive in any deeper.

Summary

The data of the above quantitative study had been collected from the students of the age group of 17-18 from two main stream arts and science and it had been concluded that the male student of arts tends to be less realistic than female students of the arts and female on average tends to be more investigative, artistic , social, enterprising and conventional.





THANK YOU