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Research aptitude of different academic streams at post graduate level

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Abstract
Present study aimed to assess the research aptitude of post graduate students of Haryana. Further, an attempt was made to differentiate the research aptitude and its sub categories amongst the different faculty such physical education, management and science students. Study was conducted on 150 students with the help of questionnaire made by Sood and Sharma. Results of the present study revealed that unfavorable aptitude was witnessed in the study. Comparative statistics revealed insignificant ($p>0.05$) difference amongst the studied groups. In nutshell, it is recommended that similar study ought to be conducted on large sample to draw more meaningful conclusion.

Keywords: research aptitude, usefulness of research in professional career, relevance of research in personal and social life, difficulties in research, anxiety of research aptitudes scale, post-graduation students

1. Introduction
Research is finding out what have not already been known and validates the known fact. Educational societies with well structured, permanent means of communicating information have huge evolutionary advantage. In the fast moving world research has become important intellectual equipment for the human beings to change their life style according to the needs and provisions of the society. Research opens new frontiers in all the fields like medicine, agriculture, space, business, and also in Education. One of the important objectives of teacher education is to create awareness and understanding of importance of research in the classroom. Thus, Action research became a part of the syllabus where in, the students are expected to prepare action plans and implement the same during their practice teaching sessions.

Quality in research work is very vital from the viewpoint of social and national development. Many (Dauphinee *et al*.; 1997) [2] surveys have been conducted to measure University students' aptitudes towards research. Presently it has been observed that quality of researches at various degree levels is very low. In India, due consideration is being provided basic theoretical knowledge of research process at the master's level after Malhotra committee report in 2008. Privatization of education, right from the elementary level to university level has also contributed to dilution of quality in researches due to mass production of research degrees.

Further, the issues related to research designs, sampling processes, statistical technique etc. create more confusion among researchers. Research's lack of efficacy, misunderstanding of statistical findings, lack of scope and avenues in research, undeveloped research in the education process, irrelevance of research in profession are some of the major concern that resulted in unfavorable and negative aptitude towards research (Geoff Baker and Debra Henson 2010) [6].

In USA research writing is taught at under graduation level while in India research is taken as separate course at post graduate level and not integrated with routine teaching-learning process. As a result, student at higher education level typically tend to view research and research-related activities which is found obstacles to learning and performance at higher education level (Papanastasiou, 2005) [7].

Assessing students' aptitudes towards research it seems a death in the knowledge base concerning empirical investigations related to students' aptitude towards research, especially in Indian educational scenario. There is an urgent need for high quality research to provide a scientific basis for Physical education and sports. However, research is grey part in physical education students as compare to other academic stream at post-graduation level. This questionnaire study documents the aptitudes and stated Post Graduate students towards undertaking research.

2. Methodology
In the present study an attempt was made to assess the research aptitude of post graduate students of Haryana. Total 150 subjects, out of them 50 subjects namely Physical Education, Science, Management, from each faculty were selected randomly after their informed consent. In the present study aptitude towards research and four variable such as general aspects of research and research process, usefulness of research in professional career, relevance of research in personal-social life, and difficulties in research and research anxiety were assessed with the help of aptitude scale towards research (Sood and Sharma; 2012) [8] was employed as tools in the present study. Aptitude towards research scale developed by Dr. Vishal Sood and Prof. Y.K. Sharma was administered to assess the research aptitude of post graduate students. The items are based on General aspects of research, usefulness of research, relevance of research, research anxiety etc. the scale comprises 42 items including 26 positive and 16 negative items which are to be rated on five point rating scale.

3. Scoring

Table 1

Name of Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Positive	5	4	3	2	1
Negative	1	2	3	4	5

5. Statistical Analysis & Interpretation

The row data was tabulated for further statistical treatment. The descriptive as well as one way ANOVA to find out the difference in selected variable amongst the selected subjects followed by post-hoc test was applied to draw more meaningful conclusion.

6. Results

Table 2: showing the characteristics of general aspect of research, usefulness of research, relevancy of research, anxiety in research, and research aptitude

	General Aspect	Usefulness	Relevance	Anxiety	Research Aptitude
Mean	47.68	28.15	30.73	36.96	143.25
Std. Error of Mean	0.65	0.34	0.46	0.52	1.41
Median	48.00	28.00	31.00	37.00	141.00
Mode	52.00	25.00	32.00	36.00	141.00
Std. Deviation	5.66	2.91	4.02	4.52	12.24
Variance	32.06	8.45	16.14	20.42	149.84
Skewness	-0.14	0.19	-0.26	-0.11	0.08
SE of Skewness	0.28	0.28	0.28	0.28	0.28
Kurtosis	-0.75	-0.91	-0.12	-0.05	-0.81
SE of Kurtosis	0.55	0.55	0.55	0.55	0.55
Range	22.00	11.00	17.00	23.00	50.00
Minimum	36.00	23.00	21.00	26.00	116.00
Maximum	58.00	34.00	38.00	49.00	166.00
Sum	3576.00	2111.00	2305.00	2772.00	10744.00

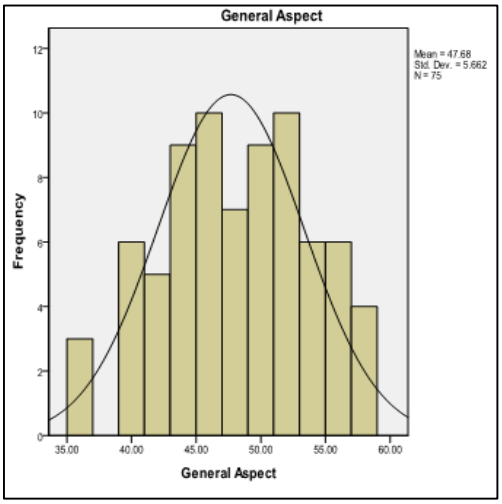

Fig 1: showing the frequency distribution and normal probability line of general aspect of research

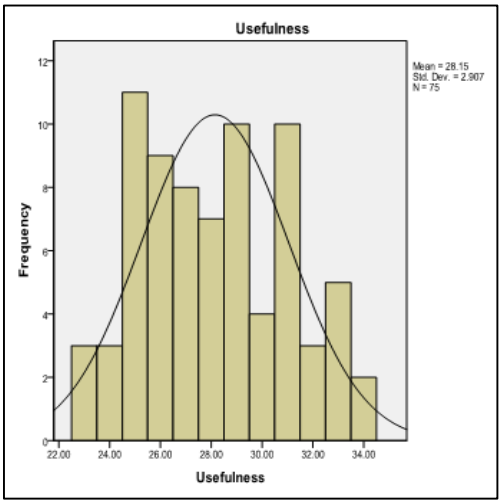

Fig 2: showing the frequency distribution and normal probability line of usefulness of research

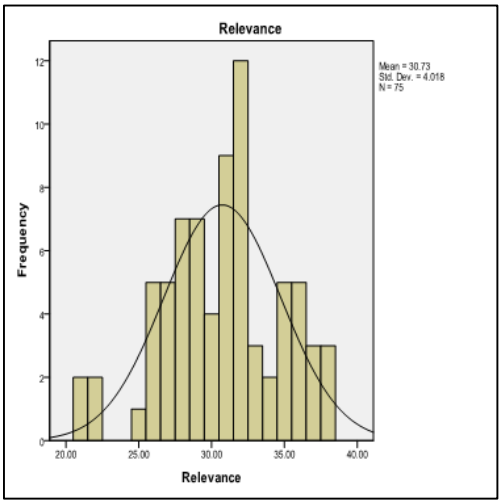

Fig 3: Showing the frequency distribution and normal probability line of relevancy of research

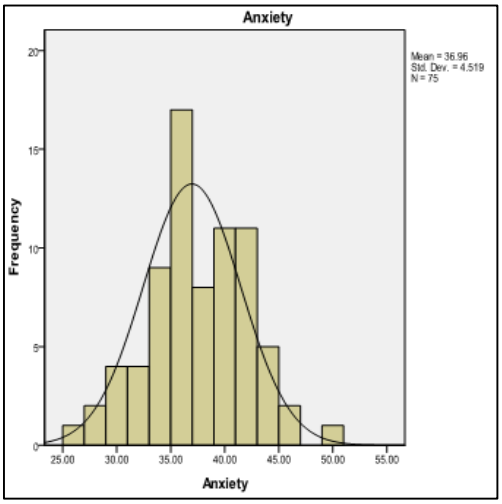

Fig 4: Showing the frequency distribution and normal probability line of anxiety in research

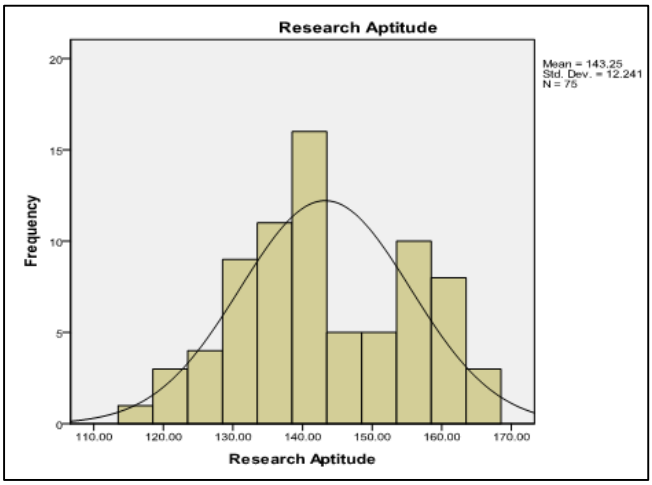

Fig 5: showing the frequency distribution and normal probability line of research aptitude

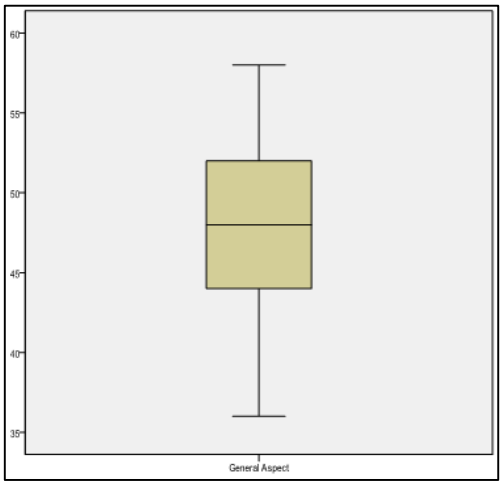

Fig 6: showing the box plot of normal distribution for general aspect of research. Distribution is seems to be normal, the mean and median should be similar (the exact numbers are: mean = 47.68, median = 48.00).

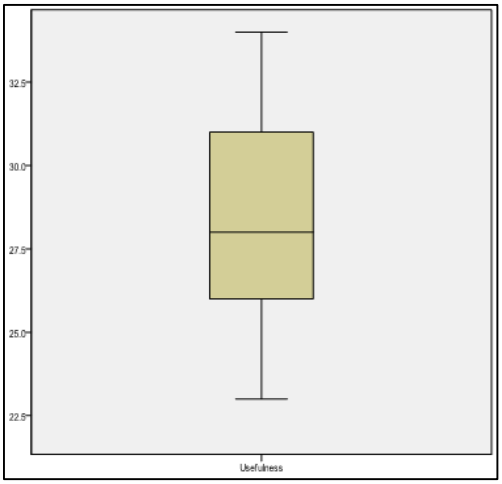

Fig 7: showing the box plot of normal distribution for usefulness of research. Distribution is seems to be normal, the mean and median should be similar (the exact numbers are: mean = 28.15, median = 28.00).

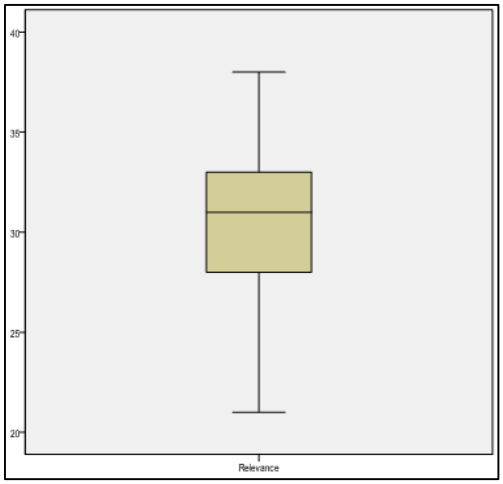

Fig 8: showing the box plot of normal distribution for relevancy of research. Distribution is seems to be normal, the mean and median should be similar (the exact numbers are: mean = 30.73, median = 31.00).

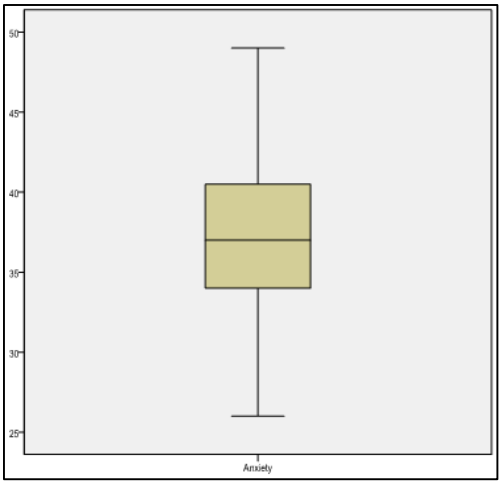

Fig 9: showing the box plot of normal distribution for anxiety in research process. Distribution is seems to be normal, the mean and median should be similar (the exact numbers are: mean = 36.96, median = 37.00).

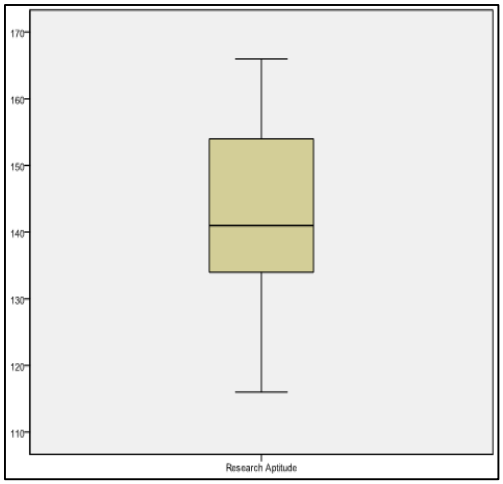

Fig 10: showing the box plot of normal distribution for research aptitude. Distribution is seems to be normal, the mean and median should be similar (the exact numbers are: mean = 143.25, median = 141.00).

Table 2 and figure 1 to 10 demonstrated the summary of characteristics of general aspect of research, usefulness of research, relevancy of research, anxiety in research, and research aptitude for pooled data. The results of descriptive statistics did not indicate inter-individual differences in the studied variable. The data did not found significantly skewed as skewness for all groups were lesser than the twice of the standard error of skewness (table 2). Similarly, Kurtosis is indicator used in distribution analysis as a sign of flattening or "peakedness" of a distribution. Result of descriptive statistics indicates the distribution as mesokurtic distribution, the normal distribution for example.

Table 3

Particular	Management		Physical Education		Science		ANOVA	
	Mean ± SE	SD	Mean ± SE	SD	Mean ± SE	SD	F - value	P-value
General Aspect	45.37 ± 1.31	6.43	47.92 ± 1.03	5.49	49.78 ± 0.85	4.12	3.88	$p< 0.05$
Usefulness	28.35 ± 0.66	3.27	28.39 ± 0.56	3.01	27.73 ± 0.50	2.41	0.34	0.72
Relevance	31.37 ± 0.72	3.53	31.03 ± 0.76	4.02	29.69 ± 0.92	4.43	1.16	0.32
Anxiety	37.67 ± 0.68	3.36	36.82 ± 0.80	4.25	36.39 ± 1.21	5.81	0.48	0.62
Research Aptitude	142.46 ± 2.41	11.79	144.11 ± 2.30	12.16	143.04 ± 1.41	12.24	0.12	0.88

Table 3 demonstrated the comparison of general aspect of research, usefulness of research, relevance of research, anxiety in research, and research aptitude in amongst the post-graduation students. On the basis of table it is clearly seen that the general aspect of research in science students were significantly (p<0.05) highest (49.48) and management students were lowest (45.37) amongst the studied groups. In contrast, other studied variable usefulness of research, relevance of research, anxiety in research, and research aptitude showed insignificant (p>0.05) difference amongst the studied groups.

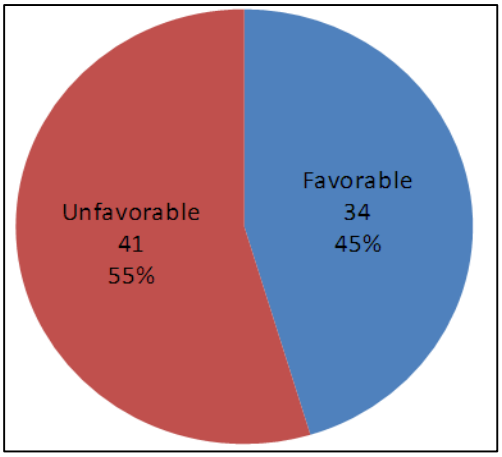

Fig 11: Distribution of aptitude towards research among all the subjects

7. Discussion and conclusion

At the beginning it was aimed to assess the aptitudes of postgraduate students towards research and hypothesized that significant differences might be witnessed in research aptitude and it underlying sub variables among Post Graduate students with respect to streams.

In the present study most of the students were not interested in research. On the basis of above results it could be concluded that most of the Post Graduate students showed poor aptitude towards research. In General Aspect of Research dimension of research aptitude significant difference was witnessed. Science students showed more favorable aptitude towards research while management students showed poor aptitude. In other dimensions such as usefulness of Research in Professional Career, Relevance of Research in personal and social life, and Difficulties in Research and anxiety of research aptitudes scale insignificant difference was witnessed among the studied groups. The present study did not corroborated with previous study (Dhrubajyoti and Hrishikesh Patel; 2015) [3].

Before drawing results and conclusion the normality of data on gathered data was seen before applying statistical tools. Almost all the variable showed normal in distribution and data were considered as parametric data. Parametric data provides maximum information about the given population (Corder; 2009) [1]. When the assumptions are correct, parametric methods will produce more accurate and precise estimates than non-parametric methods, i.e. have more statistical power. As more is assumed when the assumptions are not correct they have a greater chance of failing, and for this reason are not a robust statistical method. On the other hand, parametric formulae are often simpler to write down and faster to compute. For this reason their simplicity can make up for their lack of robustness, especially if care is taken to examine diagnostic statistics (Freedman; 2000) [5]. The data did not found significantly skewed as skewness for all groups were lesser than the twice of the standard error of skewness. Skewness is distribution analysis as a sign of asymmetry and deviation from a normal distribution. Skewness showed approximately normal. Normal distribution indicates that the most values are concentrated on centre or symmetrical around the mean. Kurtosis is indicator used in distribution analysis as a sign of flattening or "peakedness" of a distribution. Result of descriptive statistics indicate the distribution as mesokurtic distribution, the normal distribution for example. The parametric data is normally distributed mean will be the best measure of central tendency to represent the scores.

8. References

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