



**Evaluation of Research Problems faced by Postgraduate female Students at Universities of Jamshoro:
A Pareto and Mean Graph Analysis**

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Abstract: The higher Literacy has become the important for all the countries. Pakistan is also struggling for the same. But unfortunately there are many problems that faced by the post graduate students during perusing the higher Literacy. Although number of problems has been pointed out but this research was mainly focused on research problems that re faced by the postgraduate female students at the city of Jamshoro. Quantitative data collection method was employed and the 5-point likert scale was used to collect the data . The problems that were faced by the postgraduate students were evaluated by using the mean value graphs. The results evaluate that there are four main problems that are faced by the female post graduate students, that are supervisor relation, data collection, support and the university infrastructure and the services. In this paper the data was analysis using the Pareto chart and the graphs.

Keywords: : Female postgraduate , Jamshoro, Supervisor relation, Pareto

1. INTRODUCTION

Literacy is an essential factor of human development and an elementary right of every citizen. Literacy is considered to have a strong relationship with the and development of any country. Hardly any nation can achieve defensible monetary development without defensible investment in this necessity. Literacy enhanced the learning and power and mark the way towards the successful nation. Literacy improves the living standard of the nation and leads the nation towards the benefits of the individuals.

Literacy is expanding all over the world in recent years by initializing various new discipline (Butt & Rehman, 2010). Research is the important factors in the higher Literacy, as research constructs the critical thinking, dire reasoning and the balanced decision-making among the researchers.

Ramzan *et al.*, (2012) define that “Research is an original and systematic investigation undertaken to discover new facts and information about a phenomenon”. Higher Literacy creates the critical thinkers and allow the researchers to developed their thoughts and utilize them in different fields.

Pakistan is the country with 207.8 million of the population, where 10.6 billion are men and 10.1 billion are females (Samaa Pakistan 2017).

The overall literacy of Pakistan, males are 70% as compared to females which are 49 % in the year 2015

as compared to 70% and 47% in 2013-14 provisional ratio is also given in table1 (Government 2015)

**Table 1. Population ratio of male and female 2013-2015
(Government 2015)**

Province/Area	2013-14			2014-15		
	Male	Female	Total	Male	Female	Total
Pakistan	70	47	58	70	49	60
Rural	63	36	49	63	38	51
Urban	81	66	74	82	69	76
Punjab	71	52	61	71	55	63
Rural	65	43	53	65	45	55
Urban	82	71	76	82	73	77
Sindh	67	43	56	70	49	60
Rural	53	21	37	55	24	40
Urban	80	63	72	82	70	76

Along with this, there is need of improvement and investment, particularly for the Literacy of females.

As revealed by the report of Pro Pakistan the total of Literacy in Pakistan is 2.3% of GDP in 2016, which is very low, whereas in 2015 there was 2.2 % of GDP. The government has assigned sum of 21.5 billion into higher Literacy and for the 122 universities projects, along with this sum of 5.4 billion for the Prime Minister Laptop scheme in order to promote the higher Literacy and the research trends in Pakistan. (Pakistan 2017). Apart from this, there is lack of facilities that are offered particularly for the female postgraduate students.

This study focused on the postgraduate students of three universities at the Jamshoro city.

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The main objective of this research was to analyse the problems faced by the postgraduate female students during the research. This study is unique in nature because it identifies particularly the problems of female students in research, not the problems associated with the other issues. Number of studies conducted on the problems faced by the female researchers at the university level, but none of them highlighted the technical issues that female Postgraduate students face especially in the context of Pakistan.

In this Paper, authors have presented the mean graphs and the pareto analysis in order to calculate the strength of the problems and recommended the suggestions in order to avoid these problems in the future.

2. MATERIAL AND METHODS

In this section, the author discussed the material and methods used to carry out the study.

2.1 Sample Divergence

In Pakistan, there are many public and private institutes, which offer the Postgraduate degrees. The female postgraduate students are pursuing their higher studies at various universities. The targeted universities in this study are Jamshoro Literacy city universities, which comprise three universities (Jovi *et al.*, 2017)

Jamshoro city was chosen as the targeted area for this research because, it has three universities, that are offering variety of disciplines. The data for this study was collected from March 20 to April 5, 2017. The targeted population was all MS/MPhil/ME students enrolled in the batch 2015 and 2016. There were total in 1256 female students, including the three universities.

The primary as well as secondary data was collected for this research. The secondary data was collected from the postgraduate offices and administration blocks of the three universities, with written permission in order to keep the data confidential. The data was related with the number of postgraduate female students registered during the period of 2015 and 2016 along with their contact and email number, in order to approach them for the primary data collection.

The quantitative approach was adopted to collect the primary data. The close-ended questionnaire was

designed to collect the data from the postgraduate research students of batch 2015 and 2016.

The study is descriptive in nature. The research questionnaire used for this study was adopted from literature. It was divided into two sections, section one is about the demographic attitudes, and section two is about the questions regarding the problems that were identified during the literature review (Channar *et al.* 2017), which are supervisor relationship, data collection, university infrastructure, and the services provided. Total 550 questionnaires were distributed and 427, 77.6% were received, which is a good number. The demographic profile of respondents is present in (Table 2).

Table 2. Demographic profile

variables	Category	Frequency	%
Age	21-30	286	67.0
	31-41	140	32.8
	41-50	1	.2
University	SINDH	300	70.3
	LUHMS	42	9.8
	MUET	85	19.9
Batch	2015	221	51.8
	2016	206	48.2
Research setting	Primarily	93	21.8
	Lab-Based	195	45.7
	Library-based	68	15.9
	Field-based	71	16.6

There were (n=286, 67 %) female student's age between 21-30. Whereas age between 31-41 were (n= 140, 32%) and only (n=1,.2%) student was between 41-50 Respondent from Sindh University were (n=300, 42%) whereas (n=42, 9.8%) were from LUMS and (n=85, 19.9%) were from MUET. As for the batch (n=221, 51.8%) respondent were from 2015, and (n=206, 48.2 %) were from 2016 batch. For the Research setting there were (n=195, 45.7%) had Lab based setting, whereas (n=93, 21.8%) have primarily setting followed by the filed based (n=71, 16.6%) and library based students were (n=68, 15.9%).

In response to the question "How do you finance your Postgraduate Literacy". (n=176,41.2%) were on Prime minister fees reimbursement scheme PMFRS, this scheme is offered by the prime minister of Pakistan for students for less developed areas. The second number of respondent were those who are supported by the family (n=142,33.3%) , followed by the self (n= 81, 19%) and other scholarship = 28, 6.6 %.

Table 3 How do you finance your Postgraduate Literacy

	Frequency	Percent	Valid Percent	Cumulative Percent
self	81	19.0	19.0	19.0
family	142	33.3	33.3	52.2
Valid scholars hip	28	6.6	6.6	58.8
PMFRS	176	41.2	41.2	100.0
Total	427	100.0	100.0	

In response to the question “ Do you involve in job during your postgraduate studies. (n=311,72.8%) responds No, whereas (n=116,27.2%) respond yes as shown in table 3

Table 4. Do you involved in job during your Postgraduate studies?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	116	27.2	27.2	27.2
Valid No	311	72.8	72.8	100.0
Total	427	100.0	100.0	

In response to the question, “As a Postgraduate student how is your experience at your university?” (n=206, 47.8%) respond average, whereas (n=138, 32.3%) responded successful followed by (n=85, 19.9%) respond in against less successful.

Table 5 As a Postgraduate student how is your experience at your university?

	Frequency	Percent	Valid Percent	Cumulative Percent
successful	138	32.3	32.3	32.3
Valid less successful	85	19.9	19.9	52.2
average	206	47.8	47.8	100.0
Total	427	100.0	100.0	

Section 2 of the questionnaire is consist of 22 items. First, the reliability of the questionnaire was evaluated. Because it is advisable to check the reliability of the items, before going to calculate the further analysis (Tavakol and Dennick 2011; Cronbach 1951). Total The overall coronach's alpha was .868 as shown in table 7 which is acceptable.

Table 6. Case Processing Summary

		No.	%
Cases	Valid	427	100.0
	Excluded	0	0
	Total	427	100.0

Table 7. Overall Cronbach's alpha

Cronbach's Alpha	Cronbach's Alpha based on standardised item	No. of items
.868	.921	22

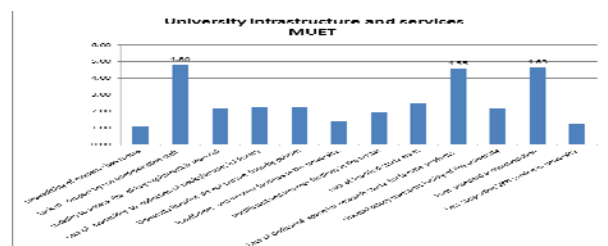
Table 8. Reliability of Individual variables.

Construct	No. of items	Cronbach's Alpha	Result
University infrastructure and services	12	.876	Acceptable
Supervisor Relationship	5	.786	Acceptable
Data collection	3	.832	Acceptable
Assistant	2	.91	Preferable

The Cronbach's alpha for individual values is >0.7 as shown in the table 8, It means the items have good interconnection with each other. If the value of Cronbach's alpha is > 0.7 is considered as acceptable (Ali *et al.* 2016; Kate Miriam Loewenthal 2004).

The mean value for every item was calculated through SPSS separately for each university. The result of mean value can be shown in charts below.

Fig. 1. Represent the mean graph of mean values for the university infrastructure and services for the MUET. There is highest mean value $n= 4.80$ for the lack of support by the administrative staff. That means out of 12 problems the highest problem is the cooperation of the administration staff, which is very important because before going to the supervisor, the student may have interacted with administrative staff, in order to know about the schedule of supervisor, availability of funds or any other administration related issues. The second highest mean $n=4.55$ is for lack of dedicated space for the research students. Usually, the research students need the calm and comfortable place to continue their research work. Unfortunately, there is the lack of space for the female research students, which affect the performance of female students. The 3rd big issue is the lack of allocated rooms for the postgraduate female students inside the campus. Students in Jamshoro Universities usually come from the rural areas, so they need the accommodation inside the campus. Unfortunately, there are no any precautions taken for the allocation of particular rooms for the postgraduate female students.

**Fig 1. Mean values for university infrastructure and service. (MUET)**

The supervisor relationship factor. The supervisor is the key personnel for the female research student, but unfortunately, it has been observed that in many cases students cannot cope up with their research due to the relationship with the supervisor. (Fig. 2) shows the items' means from MUET for the supervisor relationship. The highest mean $n = 4.40$ is for the item, 'poor help of supervisor for make coordination in the industry for research work'. As a researcher, the female students need to interact with industry, sometimes the industry people do not cooperate with the students without the interaction of the supervisors, but the supervisors always make the excuses and cannot help them to collect the data or other information from the industry. The second highest mean $n=4.30$ is for the 'unsatisfactory monitoring of supervisor from the start to the end of the research'. The supervisors are so much busy in other academic activities that they cannot give or do the proper monitoring of the research work to the female research students, due to this the female research students suffer a lot. The third highest mean $n= 4.30$ for the proper guidance of supervisor. It is the responsibility of the supervisor to give the proper guidelines to the research students, but unfortunately, in MUET, this cannot be achieved. The fourth highest mean $n=4.00$ is for the no regular meeting with the supervisor.

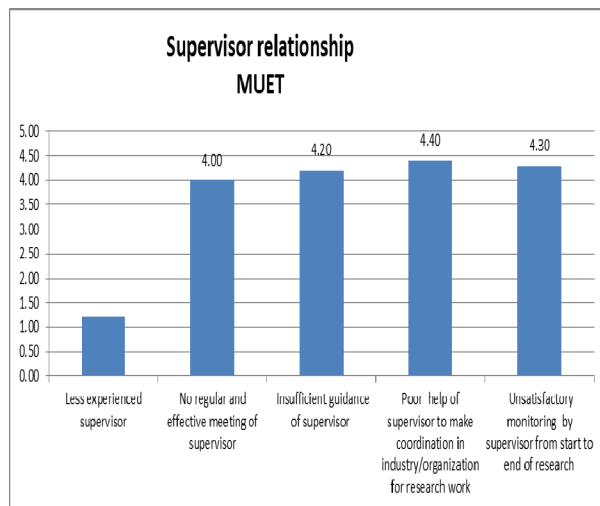


Fig 2. Mean values for Supervisor relationship. (MUET)

Fig. 3. Shows the mean value graph for the data collection problem. The highest mean is for the item 'poor help of supervisor in data collection'. In Pakistan sometimes the organization cannot allow the research students to just come and collect the data, although having the letter from the university. In this situation, the supervisor is the key personnel to help the students but in MUET, the supervisors are not helping in this regard.

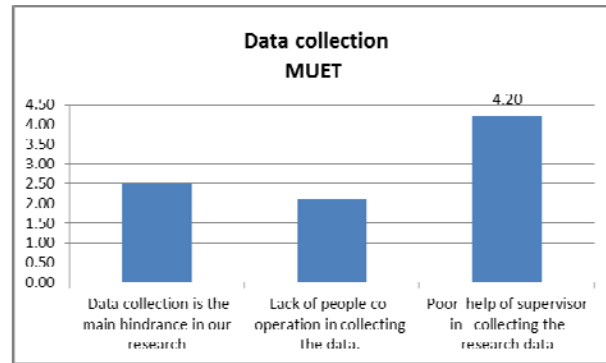


Fig 3. Mean values graph for the data collection. (MUET)

Fig. 4. Shows the mean value graph for the third problem there were only two items in this factor. The mean value is very high for the both in case of MUET. The highest mean $n=4.90$, 'insufficient support by the university', this mean university is not supporting the female students, whether in case of publication or conferences or printing there is no any support. The mean $n= 4.70$ is for the item 'unaffordable research expense'. The female students usually do not have jobs, so they cannot cope up with the research.

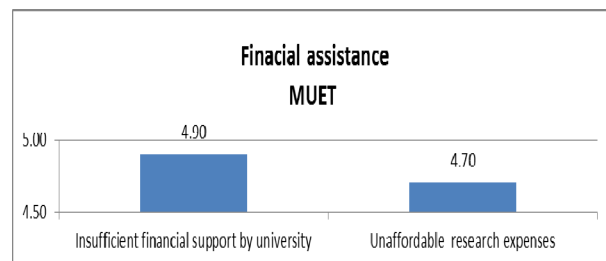


Fig 4. Mean values graph for the data assistant. (MUET).

1.2 Mean value graph LUMHS.

Fig. 5 shows the mean value graph for the university infrastructure and services for the LUMHS. The highest mean value $n= 4.90$ is for the 'supportive VPN services'. There is very poor service of VPN provided by the LUMHS to the research students, which creates so many problems for the research students. The second highest mean is for the insufficient internet facilities for the female research students. Female students have to work hard for the research but unfortunately, there is very poor service of the internet provided by the LUMHS to its research students. Third highest mean is for the $n= 4.40$ for the 'lack of dedicated space for the research students', this is the same problem with the MUET students, there is no proper space assigned for the female students inside the campus which create a lot of problems for the female students to carry out their research activities. The next highest mean $n=4.30$ is for the unavailability of access to material, being a research student and usually in the field of medical, the female

students need the proper materials, but there is lack of providence in this matter. Next highest mean $n = 4.20$ is for the 'unavailability of modern classes'. There is no proper classes assigned for the research students, that are cope with the modern facilities such as a projector.

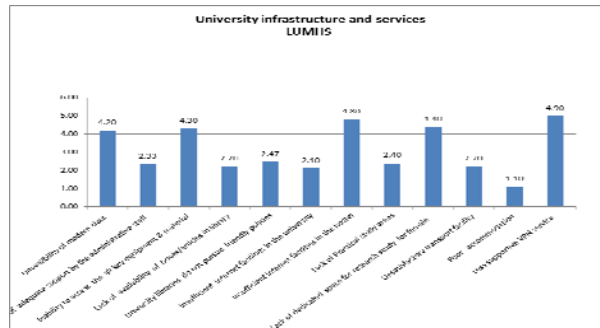


Fig 5. Mean values for university infrastructure and service. (LUMHS)

Fig. 6 shows the supervisor relationship factor for the LUMHS. The mean for the items is very low, that mean there is very good relationship between the female research students and the supervisors.

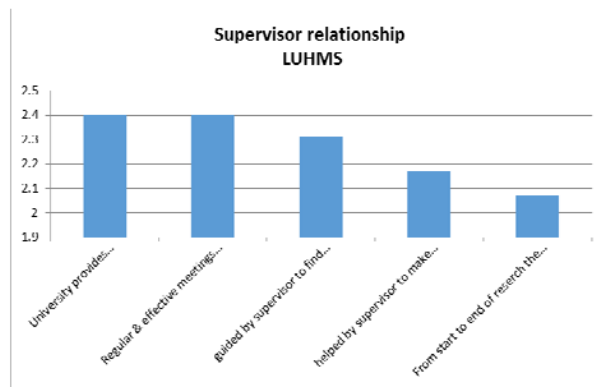


Fig 6. Mean values for supervisor relationship. (LUMHS).

Fig. 7 represents the mean value graph for the data collection in LUMHS. The highest mean $n = 4.70$ followed by the mean $n = 4.00$ is for the 'data collection is a main hindrance' and the 'lack of cooperation from the participants'.

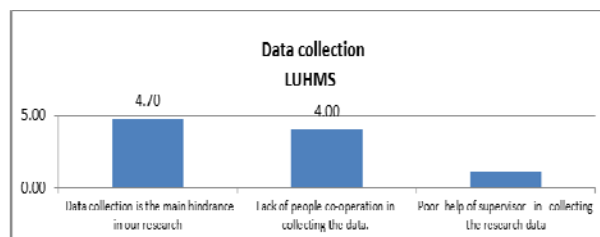


Fig 7. Mean values graph for the data collection. (LUMHS)

Fig. 8 shows the mean value graph for the third problem in LUMHS. The mean values are very low it means there is no this issue to the LUMHS research students

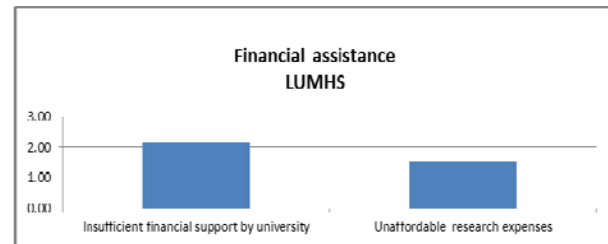


Fig 8 Mean values for third problem. (LUMHS).

3.4 Mean value graph for the University of Sindh.

Fig. 9 shows the mean value graph of university infrastructure and services for the Sindh University. The highest value $n = 4.70$ is for the 'less supportive VPN'. The Internet service inside the campus is very poor, which create hindrance in the research for the female research students. The next highest mean $n = 4.50$ is for the 'fewer internet services for the hostel'. There are no any specific facilities for the female research students dedicated inside the hostel, due to this reason; the female student cannot concentrate on their study. The next highest mean $n = 4.40$ is 'lack of dedicated space for the female research students inside the campus'. The next highest mean $n = 4.20$ is for both the items 'unavailability of modern classes' and the 'less support from the administrative staff', although both factors play an important role in order to achieve the targeted goals of female research students.

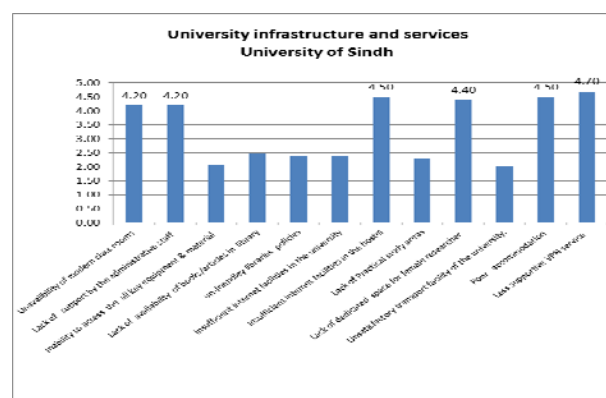


Fig 9. Mean values for university infrastructure and service. (Sindh)

Fig. 10 shows the mean graph for the supervisor relationship. The highest mean $n = 4.40$ is for the item 'poor help of supervisor for make coordination with industry for the research work', it is the same for the

LUMHS. The next highest mean $n=4.30$ for the 'unsatisfactory monitoring by the supervisor'. The third highest mean $n=4.20$ for the 'insufficient guidelines for the research'. The next mean $n=4.00$ no regular meeting with the supervisors. Overall attention should be paid towards the relationship of research students and the supervisor in University of Sindh.

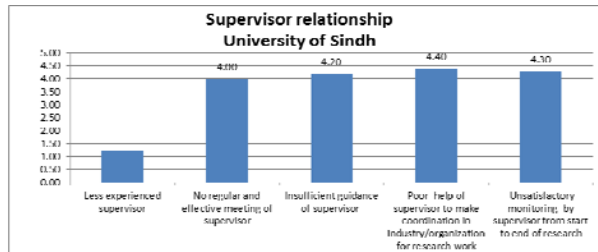


Fig 10. Mean values for supervisor relationship. (UOS).

Fig. 11 shows the mean value graph for the data collection. The mean value for the all three items is highest and same that is $n=4.20$. There is a hindrance in data collection, people are not co-operating in given the data also there is very poor help from the supervisor for the data collection. The highest population of female students belongs to this university. If the University of Sindh failed to provide the basic facilities to the female research students, they will lose the number of registered students.

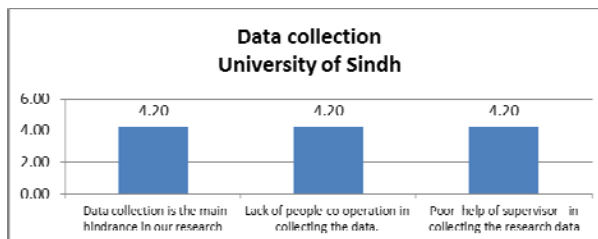


Fig11. Mean values graph for the data collection. (UOS)

Fig. 12 shows the third problem in University of Sindh, as we can see that there is no any support for the research students is provided in either research or any other support by the university for the female research students. The mean values are high for both problems that are $n=4.90$ followed by the $n=4.80$ respectively.

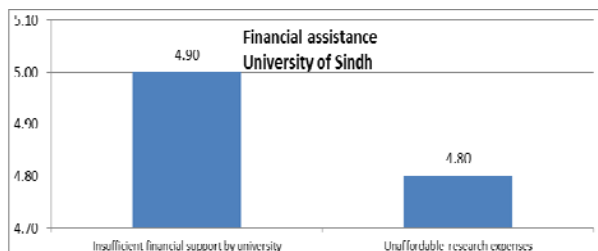


Fig 12 Mean values for assistant. (UOS).

3. PARETO ANALYSIS

Hart *et al.*, (2015) define that "Pareto analysis is a technique used for business decision making based on the 80/20 rule" The 20% problems on left are the most critical problems faced by the organization where as 80% are less critical problems.

The (Fig. 13) shows the pareto analysis for the University of Sindh. It has observed that the problems that are mostly faced by the female research students in Sindh universities are related to insufficient support, less expert supervisor for the relevant research field and lack of practical study areas for the advancement of knowledge and the less supportive VPN service.

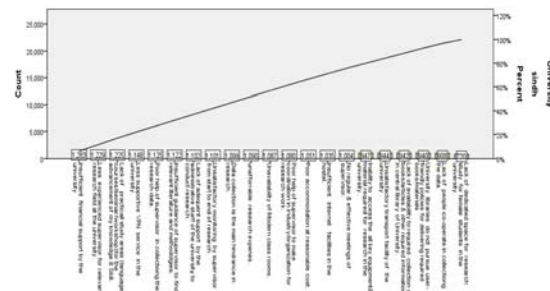


Fig 13 Pareto Analysis. (UOS).

Fig. 14 shows the Pareto analysis chart for the problems faced by postgraduate female students at MUET. According to pareto observation analysis the most common problems faced by postgraduate female students of MUET were lack of 'adequate support by the administrative staff of the university', 'insufficient support by the university' and 'unsatisfactory monitoring by supervisor from start to end of research'

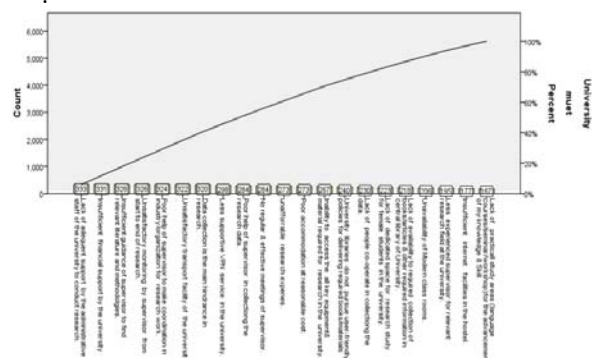


Fig 14 Pareto Analysis. (MUET).

Fig. 15 shows the pareto analysis chart. According to the pareto Analysis, the common problems faced by postgraduate female students of LUMHS are 'less supportive VPN service in university', data collection for research and 'inability to access the all key equipment & material required for research in the university'.

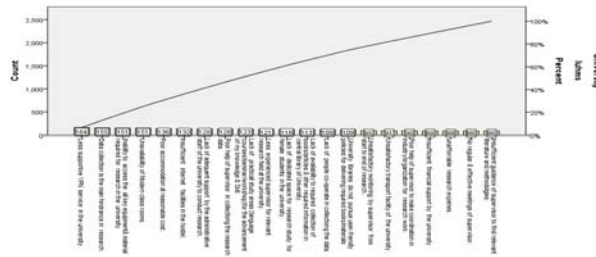


Fig 15 Pareto Analysis. (LUMHS).

4. DISCUSSION AND THE SUGGESTION

In this paper, authors have discussed the main issues faced by the postgraduate female students of Jamshoro city universities during the research. This paper is the continuation of our previous paper. The data was gathered from the 427 students of three Universities, and analysed by using the mean graph and the pareto analysis. The main interference for all the universities were university infrastructure and services, supervisor relationship, research data collection and assistance. This research provided some recommendation for the university authorities that is

1. There should be the good behaviour of university staff with the female postgraduate students as the administrative staff is the backbone of the higher Literacy institutes. The administrative staff should cooperate with the female Postgraduate students and provide them with the essential information needed by them. There should be dedicated space inside the campus and inside the hostel for the research students so that they can continue their study with the peace of mind.
2. Data collection is the main phase of the research. The supervisor should support the postgraduate female students in every way in order to enable them to collect the data easily. It may include the issuance of a proper letter mentioning that the data will be kept confidential. Sometimes supervisor can personally support the students to collect the data because some institutes feel hesitates to share their data with the research students. The action should be taken in order to support the students.
3. Many female postgraduate students belong to rural areas and they do not have enough budget to support their research. University should pay attention to this issue and fixed the particular budget for the needy postgraduate female students so that they can continue their research without any problem. Specifically, there should be some budget for the conferences and the article publication, along with the providence of particular instruments that are indispensable for the research students to conduct their experiments and analysed the result
4. The supervisor is the key personnel for the postgraduate female students. The supervisor should play the vital role in order to provide the required

guidance and time to for students. Unfortunately, during this research, we have found the big gap between the relationship of supervisor and the student. University should make the strict rules for the supervisee committee; so that research student can continue their research with being delay and complete her research timely.

5. CONCLUSION AND FUTURE WORK

This study is the guidelines for the authorities of universities in order to facilitate their female research students. The study was limited to only Jamshoro city University, in the future one can extend the study for the whole province of Sindh or for the whole Pakistan.

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