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Research Article

Measuring the Interest Level and Reasons of Post Graduate Students and Faculty Members in Pursuing PhD in ICT Disciplines in Public Sector Universities/institutes of Sindh

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Abstract

Background and Objective: Interest in doing research is one of the major factor that motivate people to earn a PhD degree. Churchill and Sanders identified five motivational categories for enrolling in a PhD program: Career development, lack of current job satisfaction, personal agenda, research as politics and drifting in. This study examines the interest level and reasons of post graduate students and faculty members in pursuing PhD degree particularly in Information and Communication Technologies disciplines in public sector universities/institutes of Sindh. **Materials and Methods:** In this study data collected from post graduate students and faculty members through close ended questionnaire and used Likert scale for measuring their interest level and reasons. Data analyzed in Statistical Package for the Social Sciences. The cross tabulation and Pearson's chi square tests used to measure interest level and reasons of pursuing PhD in public sector universities/institutes of Sindh. **Results:** Findings revealed that most of the post graduate students and faculty members have interest in research and want to do PhD. Most influencing factors for faculty members are carrier development, to increase research and development in universities/institutes and solve industrial problems. Factors influencing interest of post graduate students are, to get scholarships for PhD, to make career in academia and to have prestige in society as a PhD degree holder. **Conclusion:** Research conclude that there is strong need to increase number of PhD scholarships and public sector universities/institutes of Sindh should focus to develop links to national/international research and development funding agencies to get research and development funded projects in Information and Communication Technologies disciplines.

Key words: Information and communication technologies, research and development, interest level, funding agencies

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Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Interest in a topic or research is another major factor that motivates people to earn a PhD in various disciplines. This factor was mentioned by PhD holders in almost all the disciplines. Motivations for career development are the primary factors for pursuing a PhD. This study explored the interest level and reasons of post graduate students and faculty members in pursuing PhD degree particularly in Information and Communication Technologies disciplines shown in Table 1 in public sector universities/institutes of Sindh. Students were interested to pursue PhD education but they wanted to get partially or full funded scholarship for PhD without scholarship they were not interested to pursue PhD education. Whereas faculty members mentioned that they were not getting reward from their universities for the research and development. This study also explored that there is a lack of interest of universities in research and development. Universities pay more attention to develop research culture and make links with research and development funding agencies.

Table 1: Degrees included in ICT disciplines

List of TOT Disciplines
Information technology
Computer sciences
Computer system engineering
Computer engineering
Software engineering
Telecom engineering
Mechatronics
BS IT management
Electronics engineering
Electrical Engineering
Telecom and networks
Business administration-IT (BBA-IT)
Info. and COMM system engineering
Telecom systems
Source: http://www.ictrdf.org.pk

Table 2: List of HEC recognized public sector universities/institutes of Sindh offering degree program in ICT disciplines

List of public sector universities institutes of Sindh
Mehran University of Engineering and Technology, Jamshoro University of Sindh Jamshoro
Sindh Agriculture University Tandojam
NED University of Engineering and Technology, Karachi
University of Karachi
Institute of Business Administration, Karachi
Shah Abdul Latif University Khairpur
Quaid-e-Awam University Shaheed Benazirabad
Sukkur IBA

Source: <http://www.hec.gov.pk>. This study has collected data from nine universities/institutes and for all degree programs shown in Table 1

MATERIALS AND METHODS

Factors Influencing the decision to enroll in PhD Program. Churchill and Sander identified five motivational categories for enrolling in a PhD program (1) Career development, (2) Lack of current job satisfaction, (3) Personal agenda, (4) Research as politics and (5) Drifting¹. (1) Career development: Motivations for career development are the primary factors for pursuing a PhD. (2) Research interest: Interest in a topic or research is another major factor that motivates people to earn a PhD in various disciplines. This factor was mentioned by almost all the PhD holders of all the disciplines. (3) Personal factors: The one of the largest motivations for earning a PhD is personal motivational factors. (4) Prior experience, influence of others: Two motivational factors that show what motivates people to earn a PhD are prior experiences and the influence of someone. (5) Other motivational factors: Other motivational factors mentioned in the literature are PhD holders motivated by the desire to acquire the name degree, since there is such prestige associated with the PhD². Secondly, institutions influence students' path to the doctorate degree. More specifically, institutions classified as "Very high research activity"³.

Funding agencies: Funding agencies are most of the time public organizations financed by the state to define and execute a large part of the science policy. Their dependence on political authority differs, but almost all funding agencies have a considerable amount of latitude in determining their strategies, these agencies support all disciplines⁴.

The target population of this study included the post graduate students and non-PhD faculty members of ICT disciplines of public sector universities/institutes of Sindh shown in Table 3. Primary data collected through survey questionnaire. The two-separate closed ended survey questionnaires were developed from literature review. One for the post graduate students and other for the faculty members and were filled by post graduate students and non-PhD faculty members of nine public sector universities of Sindh mentioned in Table 2. Data was analyzed in SPSS. The cross tabulation and Pearson's chi-square tests used to measure interest level and reasons of students and faculty members in pursuing PhD in ICT discipline in public sector universities/institutes of Sindh list of ICT disciplines shown in Table 1. Used a 4-point Likert scale, participants were asked to reflect on their personal interest toward pursuing a PhD degree (1 = No interest, 2 = Little interest, 3 = Moderate interest, 4 = High interest). Students and faculty members were very cooperative in nine universities and they also appreciated the research study.

Table 3: Target population

Target population	No of students and faculty members	Received questionnaires	Percentage (%)
Total population of PG students	440	277	62
Total population of non PhD faculty members	214	129	60

Table 4: Representation of data in chi-square

Students Interest level	Person chi-square value	Asymp. significance Std. (2- sided)
Are you interested in pursuing PhD education?	124.553	0.000
Are you interested in doing research work?	83.568	0.000
Are you interested in research for knowledge transfer?	94.399	0.000
Are you interested in joint R and D projects with industry funded by Higher Education Commission?	92.332	0.000
Are you interested in joint R and D projects with the industry?	97.032	0.000
Do you want to get scholarship for PhD?	81.855	0.000
Do you want to make career in academia?	98.961	0.000
Does your research give benefits to society?	109.873	0.000
Does your research solve the industrial problems?	116.182	0.000
Do you want to have prestige in society?	90.543	0.000

Chi-square table shows that there is significant difference within universities about the student's interest level for pursuing PhD education

RESULTS

Findings reveal, in Table 4 Chi-square table shows that there is a significance difference in interest level of post graduate students in universities/institutes. Graphs show in Fig. 1-10, that post graduate students are interested and motivated to pursue PhD education. They have interest in research. They want to be the part of joint R and D projects which funded by HEC or any other industry to solve the industrial problems and want to give benefit to society through their research. The most influencing factors that motivate them are, to get full funded or partially funded scholarships for PhD. They want to make their career in academia and they have ardent desire to pursue PhD education to have prestige in society as PhD degree holder. The post graduate students of all nine public sector universities/institutes of Sindh which offering degree program in ICT disciplines are highly interested to pursue PhD education.

In Table 5 Chi-square table shows that there is significant difference in interest level of faculty members in universities/institutes. Graphs show in Fig. 11-19, that most influencing factors for faculty members are they want to do PhD for their career development and to increase research and development in universities/institutes. Solve the industrial problems through research. The study identifies that faculty members of IBA Karachi, Sukkur IBA and MUET are getting R and D funds and rewards from their universities/institutes for research and they are doing research to establish relationship between industry and academia. However, the other universities faculty members are not getting R and D funds and rewards from their universities and

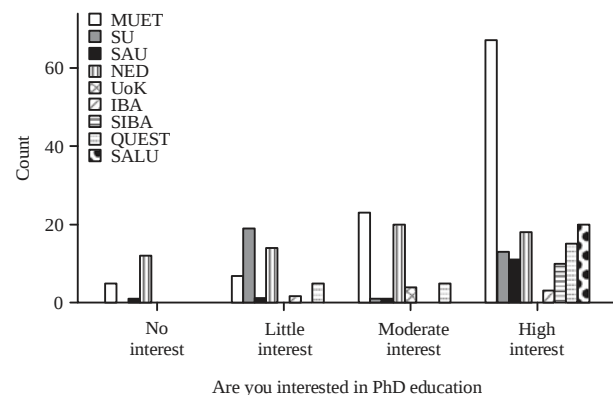


Fig. 1: Students interest level about pursuing PhD

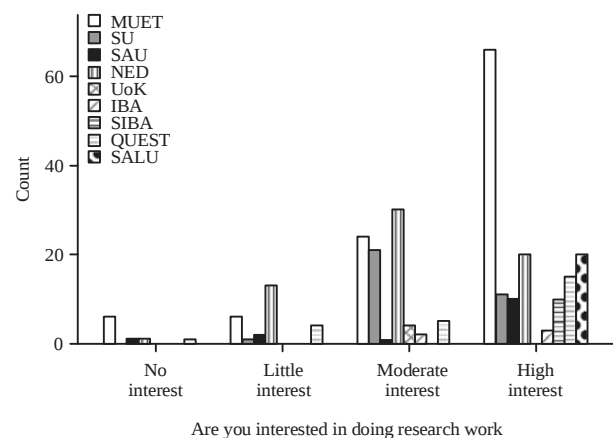


Fig. 2: Students interest level about doing research

they have showed moderate interest to establish links between universities and academia. Faculty members of all nine universities/institutes are personally motivated to do PhD to contribute to the knowledge economy.

Table 5: Representation of data in chi-square

Faculty members Interest level	Pearson chi-square value	Asymp. Significance (2-sided)
Are you interested doing PhD for your career development?	27.064	0.301
Do you have interest in doing research?	25.941	0.356
Do you get R&D fund from your university/institute for research?	42.328	0.012
Do you get reward from your university/institute for research?	45.672	0.005
Do you have personal motivation to pursue PhD?	48.351	0.002
Does your university/institute have policy to increase R and D in University/institute?	74.270	0.000
Are you doing PhD to solve industrial problems?	39.441	0.025
Are you doing research to establish relationship between industry and academia?	34.862	0.070
Are you doing research to contribute to knowledge economy?	30.984	0.154

Chi-square table shows that there is significant difference within universities about the faculty members interest level for pursuing PhD education

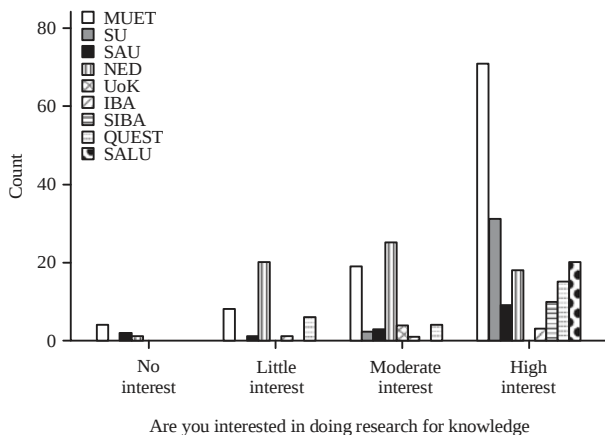


Fig. 3: Students interest level about doing research for knowledge transfer

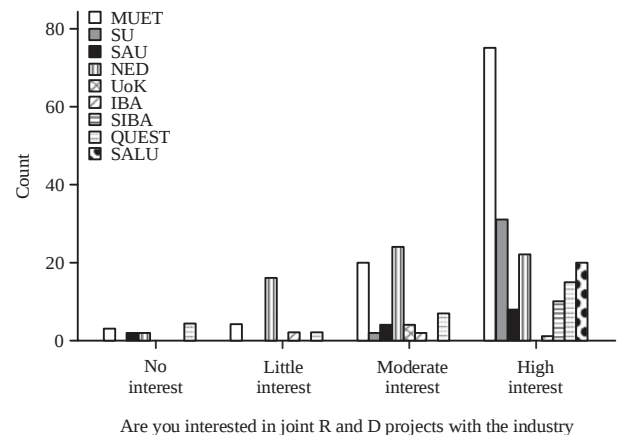


Fig. 5: Students interest level about R and D funded projects with industry

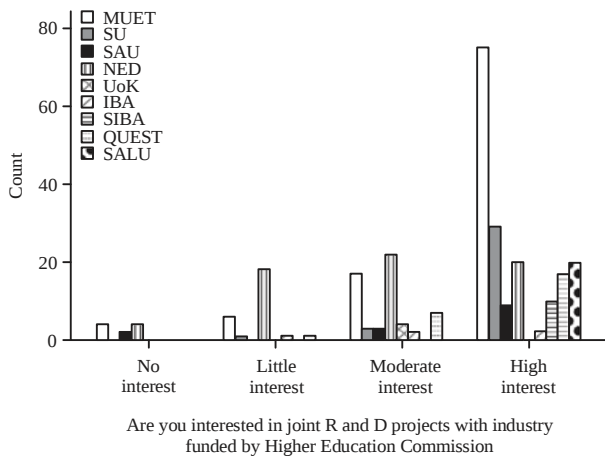


Fig. 4: Students interest level about R and D funded projects

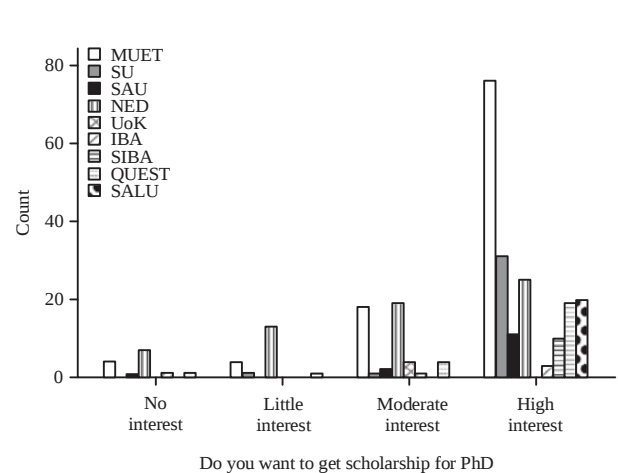


Fig. 6: Students interest level about getting scholarships

DISCUSSION

In the literature, there were five main factors associated with motivations for pursuing a PhD, career development, interest in a topic or research, personal motives, prior experiences, influence of others. The findings of this study

indicate that the motivations for pursuing PhD is career development⁵. The study focused on what motivates people to pursue a PhD education. Motivational factors related to career development was primary factor that were cited in the all research findings. The participants in this study pursue PhD education with the objective to make career in academia.

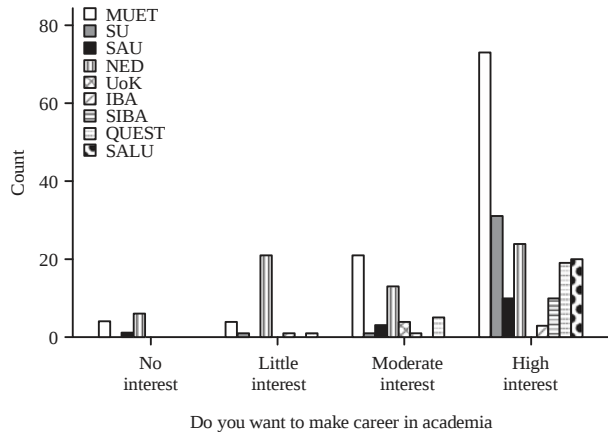


Fig. 7: Students interest level about to make career in academia

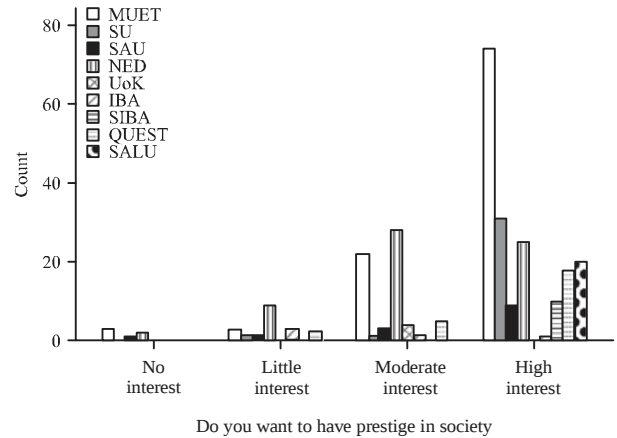


Fig. 10: Students interest level about doing PhD to have prestige in society

Graphs show that students are more interested and motivated to pursue PhD education. They want to get scholarships for PhD and want to make career in academia

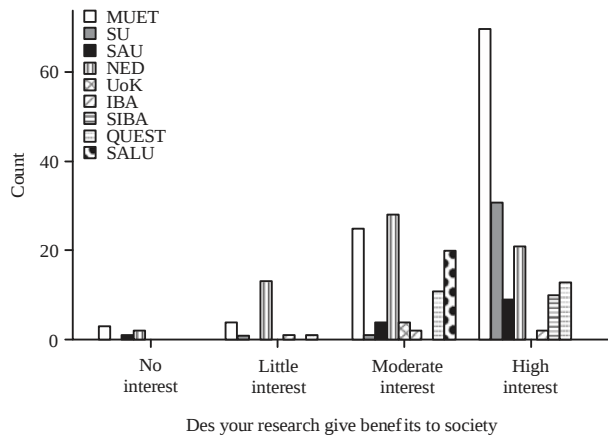


Fig. 8: Students interest level about doing research to give benefits to society

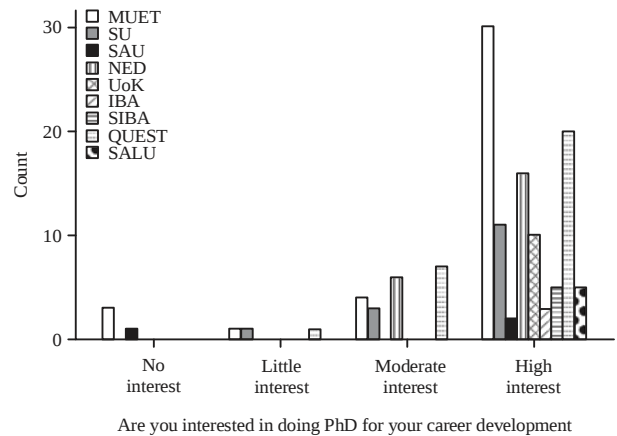


Fig. 11: Faculty members interest level about doing PhD as career development

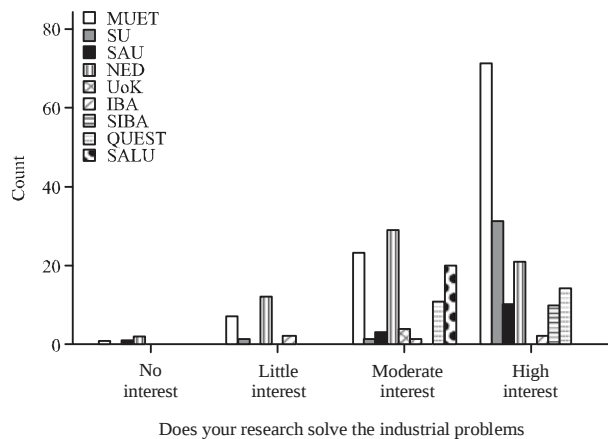


Fig. 9: Students interest level about doing research to solve industrial problems

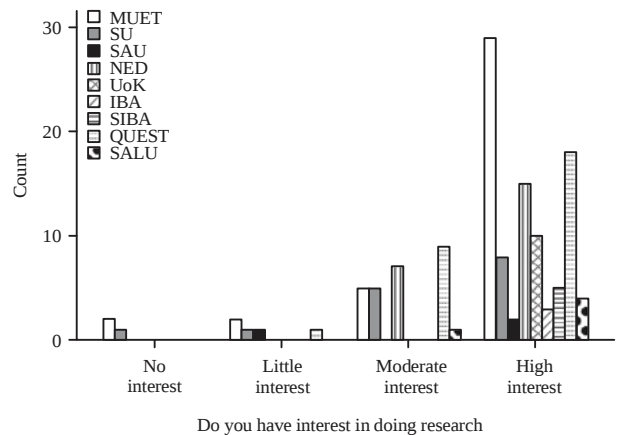


Fig. 12: Faculty members interest level about doing research

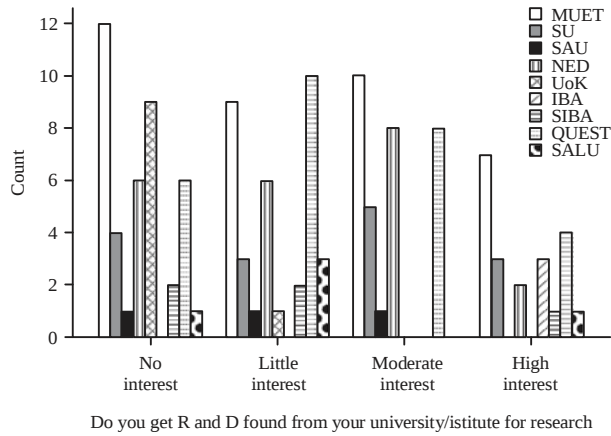


Fig. 13: Faculty members interest level about getting R and D funds from their university/institute

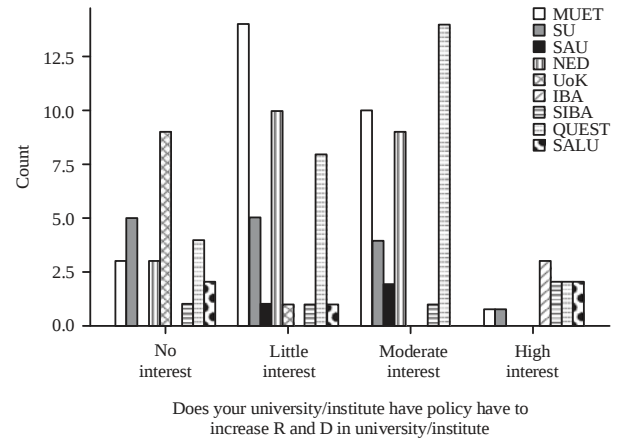


Fig. 16: Faculty members interest level about their university policy to increase R and D in university/institute

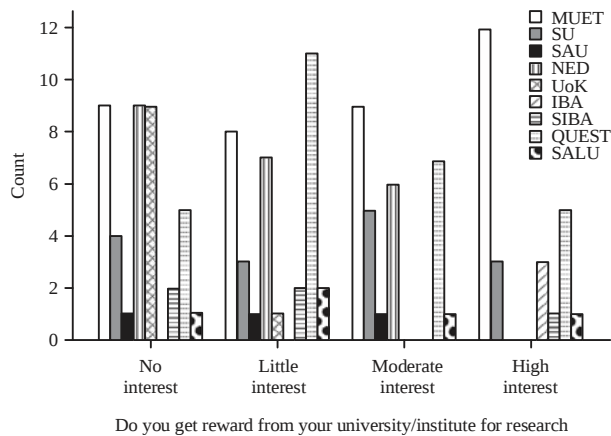


Fig. 14: Faculty members interest level about getting rewards for research

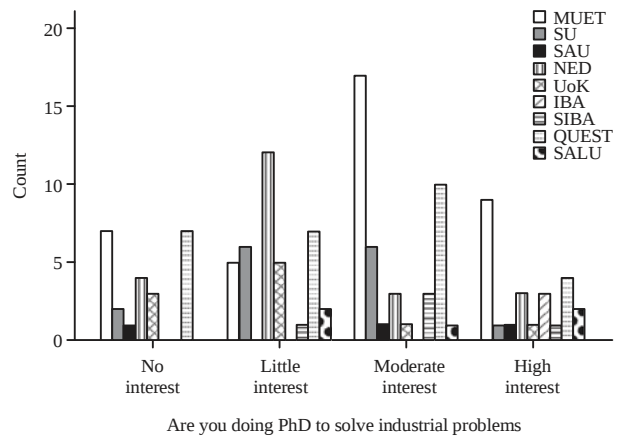


Fig. 17: Faculty members interest level about solve industrial problems

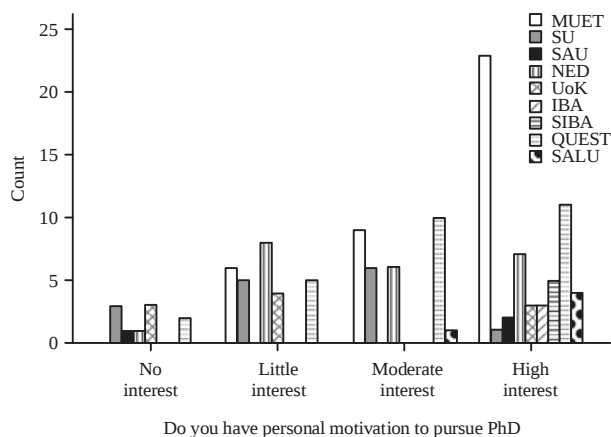


Fig. 15: Faculty members interest level about personal motivation to pursue PhD

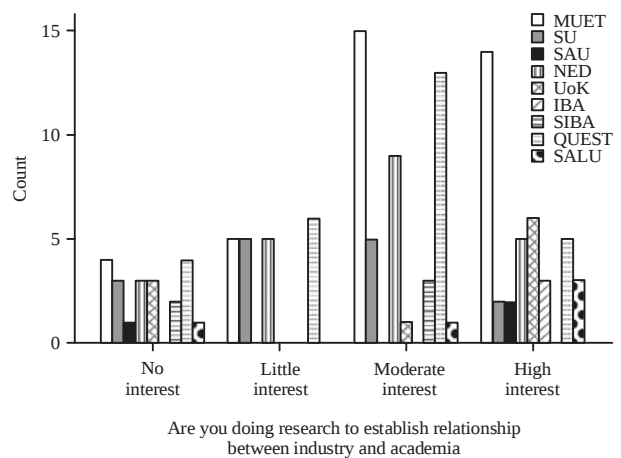


Fig. 18: Faculty members interest level about relationship between university and academia

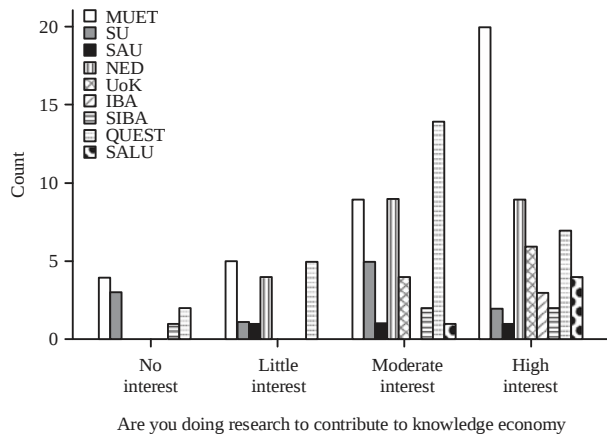


Fig. 19: Faculty members interest level about doing research to contribute knowledge economy

Graphs show that faculty members are more interested and motivated to pursue PhD education for their career development

There is also a factor that motivate to get a PhD because of interest in research. One of the motivational factor mentioned in the literature that PhD holders want to pursue PhD to have prestige in society as PhD degree holder⁶. Two other motivational factors mentioned in the literature are prior experiences and the influence of someone. The third of the largest motivational factor for earning a PhD related to personal motivational factors⁷.

CONCLUSION

Research concluded that there is strong need to increase number of PhD scholarships in universities. Public sector universities/institutes of Sindh should focus to develop links to national/international research and development funding agencies who are funding in Information and Communication Technologies disciplines to get partially or full funded PhD scholarships and funded project of research and development to increase the research culture in universities/institutes.

SIGNIFICANT STATEMENT

This research study discovered that faculty members and post graduate students are highly interested and motivated to do research in information and communication technologies disciplines in public sector universities/institutes of Sindh. It is also discovered that public sector universities in Sindh are suffering from low research and development culture.

ACKNOWLEDGMENTS

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