EXPLORING STUDENTS’ PREFERENCES FOR UNDERGRADUATE RESEARCH- A GATEWAY TO ECONOMIC TRANSFORMATION

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Introduction

- Universities role in economy development
- Growth of knowledge based economy - research innovation by universities thereby staggering economic development.
- possible through strong research programs in universities.
- vital component of this research - UGR
- Weak UGR in developing countries
- Resulting - poor research-based experience
Introduction

• UGR- research program in which the UG students are involved in original work related to some current problem beyond the scope of curriculum and which may encourage publishable material
• the problem under investigation may not be related to curriculum or course of studies
• students work on solving problems-produce new knowledge- published.
universities are expected to contribute towards sustainable development of economy through quality preparation of students in education as well as research

- UGR- a gateway to economic transformation
- UGR movement in US- late twentieth century
- UGR- top universities including University of Berkeley, Boston, the Georgia Institute of Technology, UCLA, MIT, Michigan, New Hampshire, Oregon etc.

- universities in Pakistan- weak UGRP
- HEC initiatives- faculty-led research projects, RA’s,
Objectives of the study

• Exploring views of UG students on involvement in UGR
• Identifying students’ perception about working as research intern with local industry
• Designing a framework for increasing students’ involvement in UGR
Methodology

- Descriptive
- Data collected- a questionnaire from 4 universities in Rawalpindi-Islamabad
- Population- UG students of science and social science
- Total respondents- 2068
- Valid questionnaires- 2004
- Questionnaire validated- pilot tested
- Responses- converted into percentages gender wise and chi square values was calculated using cross tabs
- Open ended item in Questionnaire for qualitative dimension to data interpretation.
• Open ended item- exploring students’ motive and expectation from involving as research intern with the local industry.

• The frequency of students’ responses was categorized and then converted into percentages to rank preferences.

• For developing framework to help strengthen industries-academic linkages- a systematic exploration of students’ preferences was carried out.
<table>
<thead>
<tr>
<th>Students’ Preferences</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
<th>Chi square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing to work as research intern with local industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>85.3</td>
<td>89.6</td>
<td>87.5</td>
<td>19.31, p&lt;.05</td>
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<tr>
<td>No</td>
<td>14.7</td>
<td>10.4</td>
<td>12.6</td>
<td></td>
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<tr>
<td>Future plan after passing bachelor</td>
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<td></td>
<td></td>
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<tr>
<td>Opt for Job</td>
<td>33.4</td>
<td>35.5</td>
<td>34.6</td>
<td>16.28, p&lt;.05</td>
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<tr>
<td>Enrol in MS/PhD</td>
<td>52.6</td>
<td>56.5</td>
<td>54.7</td>
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<tr>
<td>Any other</td>
<td>14.0</td>
<td>8.0</td>
<td>10.7</td>
<td></td>
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<tr>
<td>Managing time effectively if join a research internship</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>81.2</td>
<td>86.7</td>
<td>84.3</td>
<td>11.47, p&lt;.05</td>
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<tr>
<td>No</td>
<td>18.8</td>
<td>13.3</td>
<td>15.7</td>
<td></td>
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<tr>
<td>Prefer duration of research internship</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 month</td>
<td>52.9</td>
<td>54.4</td>
<td>53.7</td>
<td>31.96, p&lt;.05</td>
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<tr>
<td>4 months</td>
<td>24.2</td>
<td>26.9</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td>More than 4 months</td>
<td>22.9</td>
<td>18.7</td>
<td>20.7</td>
<td></td>
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<tr>
<td>Prefer time of year for research internship</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>During Semester</td>
<td>53.9</td>
<td>44.8</td>
<td>49.4</td>
<td>16.33, p&lt;.05</td>
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<td>Summer vacation</td>
<td>46.1</td>
<td>55.2</td>
<td>50.7</td>
<td></td>
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<td>Prefer days for involvement in research internship</td>
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<td></td>
<td></td>
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<tr>
<td>Weekdays</td>
<td>46.9</td>
<td>49.8</td>
<td>48.4</td>
<td>1.71, p&gt;.05</td>
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<td>weekends</td>
<td>53.1</td>
<td>50.2</td>
<td>51.6</td>
<td></td>
</tr>
<tr>
<td>Prefer type of research work</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field research</td>
<td>67.3</td>
<td>59.4</td>
<td>61.4</td>
<td>14.26, p&lt;.05</td>
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<td>Lab research</td>
<td>22.6</td>
<td>27.0</td>
<td>24.8</td>
<td></td>
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<tr>
<td>Desk research</td>
<td>10.1</td>
<td>13.6</td>
<td>11.9</td>
<td></td>
</tr>
</tbody>
</table>
Male

Time management
Opt for Job
Enroll MS/PhD
Any other
Engagement with Industry
No engagement
1 month
4 months
Above 4 months
During Semester
During Summer Vacation

Weekdays
Weekends
Lab work
Field Work
Desk Work

Female
• Both gender can effectively manage their time even if they are involved in research based activities
• preference for continuing higher studies
• UG students willing to work as research intern with local industry
• Preferred duration- one month.
• male students prefer research internship during summer while the female students prefer research work during summer vacation.
• Both gender can be involved during weekdays/weekends
Open-ended item

• The students responded differently on the open ended item.
• What do the students expect from involvement in research internship with local industry and the reason for involving in research internship?
Figure 2. Students’ expectation from involvement in research internship

- Fulfil course requirement
  - % of total: 15%
  - % of female: 11%
  - % of male: 19%

- Get pleasure of research
  - % of total: 16%
  - % of female: 14%
  - % of male: 18%

- Get monetary benefit
  - % of total: 19.5%
  - % of female: 13%
  - % of male: 26%

- Prepare for higher studies
  - % of total: 28.5%
  - % of female: 25%
  - % of male: 32%

- Enhance CV
  - % of total: 32.5%
  - % of female: 29%
  - % of male: 36%

- Gain research experience
  - % of total: 60%
  - % of female: 61%
  - % of male: 59%

Percentage of Responses
Conclusion

• strongest economies-driven by knowledge as compared to traditional inputs
• This requires a renewed focus on improving higher education research especially UGR
• Exploring research preferences of UG students will provide a different perspective towards improving UGR in universities in Pakistan
• help in improving human research capital which will finally pass to the local industry for stimulating economic development
• universities should develop intensive industrial linkages for sustainable development
Limitations

• focussed on UG students only which limits the generalizability of the findings
• For greater reliability- relevant faculty members, university administration and the professionals associated with industry
• Questionnaire was used for collection of data
• Future researches may use different research instruments for triangulation and collecting diverse type of data for improving UGR and industrial linkages.
Acknowledgement

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References

References

- Stephens, A. (2009). The Effects of Fieldwork on Student Achievement and Motivation in Science Education. California State University, Northridge.