Towards a university Enterprise alliance in Jordan

TEJ

Benchmarking University Enterprise Cooperation in Jordan

ECUTIVE SUMMARY

The following report constitutes an analysis of the TEJ (Tempus Program) project study that is aimed at stimulating the development of a Jordanian university enterprise cooperation culture, by promoting good practice for implementing university based enterprise liaison offices in 8 Jordanian Universities, creation of capacities in human resources, promoting of coherent information and communication strategies among the Universities' communities and within the local business environment as well as providing necessary strategic input for the creation of long-term partnerships and collaborative research with enterprises.The survey was conducted in 2014, and was intended to provide a brief of different models of University-Enterprise liaison structures, entrepreneurial and research cooperation support systems, and current practices in the participating Jordanian and European universities. Also, to collect raw data to examine the existing structure, support systems and current practices in regard to research and innovation, and grant application and management in the participating Higher Education Institutions (HEIs). The data provided will be used by the TEJ project consortium to gain a better understanding of the pre-project situation at the partner HEIs with regards to the above mentioned topics, in order to tailor the planned project activities (such as the capacity building actions) to the needs of the partner organizations.

The report drew some interesting conclusions.It studied in-depth the following items, as a general comparison: TEJ is aimed at stimulating the development of a Jordanian university enterprise cooperation culture, by promoting good practice for implementing university based enterprise liaison offices in 8 Jordanian Universities, creation of capacities in human resources, promoting of coherent information and communication strategies among the Universities' communities and within the local business environment as well as providing necessary strategic input for the creation of long-term partnerships and collaborative research with enterprises..

Some of them a in conclusions the report draws are the following:

The importance of relations between universities and their socio-economic environment has become a topical issue in Europe in the last 20 years, and has also been stressed within the implementation of the Bologna process. Whereas in most European countries, relations between Universities and enterprises have been developed and intensified during the past decade, Jordanian Universities are currently only starting to create strategies and instruments in this domain. The project is aimed at stimulating the development of a Jordanian university enterprise cooperation culture, by promoting good practice for implementing university based enterprise liaison offices in 8 Jordanian Universities, creation of capacities in human resources, promoting of coherent information and communication strategies among the Universities' communities and within the local business environment as well as providing necessary strategic input for the creation of long-term partnerships and collaborative research with enterprises. In the longer term, the project aims to contribute to contribute to:

- Higher employability of students though improved training and employment Prospects,
- Generation of opportunity to attract additional funds for teaching & Research,
- Increasing of financial autonomy of Universities through stimulating of Cooperative research with enterprises and generation of supplemental income from consulting,
- Increased innovation and technology transfer and stronger economic development.

The establishment of well-structured interface-scheme for the creation of university enterprise partnerships in 8 Jordanian universities can furthermore serve as a role model and stimulate structural and management reforms in other Jordanian higher education institutions willing to establish relations with their economic environment.

The Project will implement the following outputs and activities:

1. Establishment of the Universities-enterprises cooperation network and implementation of its activities to serve as a sustainable supra-national platform for exchange of experiences and good practices with a view to fostering a regular strategic dialog among higher education and business sector.
2. Enhanced Human Capacity concerning strategic, managerial and administrative skills in organization of university-enterprises cooperation at Jordanian Universities through implementation of 5 targeted and In-Job training modules
3. 3. Infrastructural and institutional establishment of liaison offices at Jordanian Universities;
4. Pilot implementation of the operations of the newly created Liaison Offices;
5. Public awareness & dissemination actions of project results throughout the project duration;
6. Ensuring sustainability of projects results though the development of long-term strategies for institutional implementation and financing of the established structures and services.

CONTENTS

I.INTRODUCTION

Rationale and Analytical Methodology

1. Rationale1

As a Tempus program project for international cooperation, the TEJ project seeks examine the development of a Jordanian university enterprise cooperation culture, by promoting good practice for implementing university based enterprise liaison offices in 8 Jordanian Universities, creation of capacities in human resources, promoting of coherent information and communication strategies among the Universities' communities and within the local business environment as well as providing necessary strategic input for the creation of long-term partnerships and collaborative research with enterprises. The importance of relations between universities and their socio-economic environment has become a topical issue in Europe in the last 20 years, and has also been stressed within the implementation of the Bologna process. Whereas in most European countries, relations between Universities and enterprises have been developed and intensified during the past decade, Jordanian Universities are currently only starting to create strategies and instruments in this domain.

The project includes partners from Jordan private and official universities, as well as private and official organization, and is underpinned by the experience of partners from France, Italy and Portugal.

TEJ project will contribute to:

- Higher employability of students though improved training and employment Prospects,
- Generation of opportunity to attract additional funds for teaching & Research,
- Increasing of financial autonomy of Universities through stimulating of Cooperative research with enterprises and generation of supplemental income from consulting,
- Increased innovation and technology transfer and stronger economic development.

Specifically, the project outcomes are the following:

- Establishment of the Universities-enterprises cooperation network and implementation of its activities to serve as a sustainable supra-national platform for exchange of experiences and good practices with a view to fostering a regular strategic dialog among higher education and business sector.
- Enhanced Human Capacity concerning strategic, managerial and administrative skills in organization of university-enterprises cooperation at Jordanian Universities through implementation of 5 targeted and In-Job training modules
- Infrastructural and institutional establishment of liaison offices at Jordanian Universities;
- Pilot implementation of the operations of the newly created Liaison Offices;
- Public awareness & dissemination actions of project results throughout the project duration;
- Ensuring sustainability of projects results though the development of long-term strategies for institutional implementation and financing of the established structures and services!

1. Text based on the Tempus Project Application Form

2. Analytical Methodology

The TEJ needs analysis exercise was carried out in the form of a distributed questionnaire and short survey for three categories staff, researchers and enterprises. The questionnaire was carefully and succinctly worded for maximum information in as few questions as possible. The objective of this survey is to collect raw data providing a general overview of the existing services and practices with regard to stimulating the development of a Jordanian university enterprise cooperation culture, by promoting good practice for implementing university based enterprise liaison offices in 8 Jordanian Universities. The project will help in creation of capacities in human resources and promote coherent information and communication strategies among the Universities' communities and within the local business environment as well as providing necessary strategic input for the creation of long-term partnerships and collaborative research with enterprises.

The questionnaires were targeted at Universities and distributed to almost 9 universities. The questionnaires were developed by University of de Alacant and approved by all the consortium partners following a short process. The questionnaire was constructed to respect as far as possible research tool basics to avoid bias and other incidences in the data. This included, for example: easy-to-follow and clearly worded questions, no 'leading' questions, the definition of the intended sample and candidate respondent, comparable data (via mean, percentage, number). Little use of free text and survey kept to a minimum length possible, no duplication of questions and no redundant questions (all leading to a useful conclusion).

The draft document was ratified for utility by the partners involved, and in particular those assigned with the task of collecting responses.

Confidentiality issues: Any information obtained in connection with the survey was to and will remain confidential outside of this document and survey. Responses were collected between 9 Universities and analyzed up to November, 2014. The response rate was 100%.

II.GENERALOVERVIEW
Main results and findings

1. General introduction to the results

Within this section, the general overview of the results is presented. It will give a generic but clarifying picture of the Jordanian university enterprise cooperation culture. Following the structure of the questionnaires, it will examine distinct elements.

1.2 Sample

Firstly, the sample must be clearly identified

TEJ project includes18 partner's partner universities; 9universities from government and private sectors, and 6 Universities from Europe. The9partneruniversitiesfrom (south, middle, and north universities in Jordan) participated in the survey.

1.2 Limitation

The above sample is limited and could have been more extensive to achieve a better snapshot. Not all questionnaires were completed in their entirety, and there is not an equal spread of respondents per institution. The latter was combated by using means and percentages for analysis. There are also questions which could have been further enhanced allowing clarification from the respondents.

II . General Questions About Your Research activities

How much % of your working time do you dedicate to research? Indicate in % of your total working time

As we can see that 17% answered 10%, 17% answered 15%, 23% answered 20%, 16% answered 50%,25% answered 60%, and 2% did not answer.
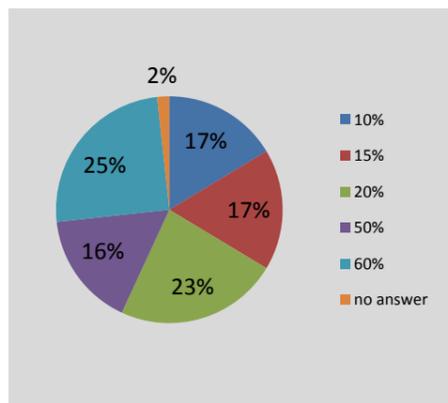
Is this percentage what is required from you from your institution?

As we can see that 17% answered YES and 83% answered NO.
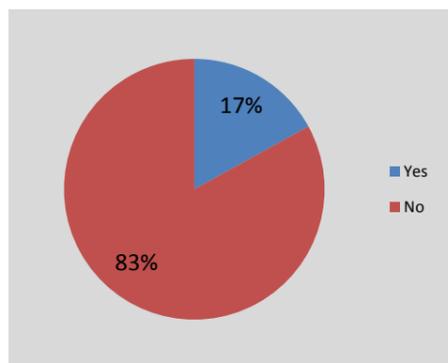
Have you submitted any research proposals in the past 5 years?

As we can see that 29% answered YES and 71% answered NO.
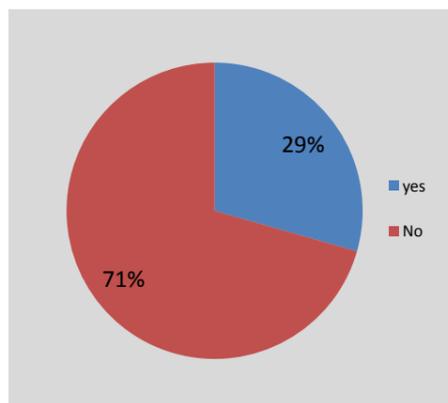
What are the funding sources of your research?

As we can see that 52% answered Institution funds(University Funds), ,18% answered National funding provided specifically for research , 9% answered International funding (i.e. European Commission) and 21% answered others.
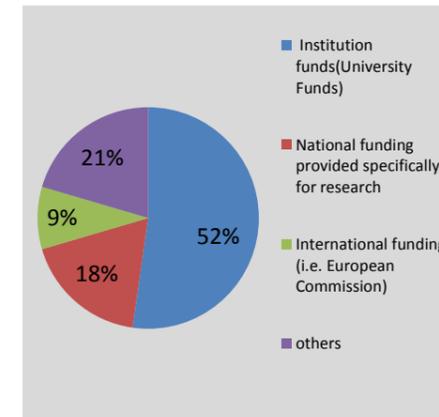
How are you usually informed of funding opportunities?

As we can see that
40% answered Formal university internal channels (emails, newsletter, etc.)/regular information is provided by a responsible department ,

27% Informal university internal channels(colleagues,etc.),

16% Own networks (colleagues, external research centers, conferences etc.),

9% Own subscriptions to media and social networks (LinkedIn, etc.) and
8% Others
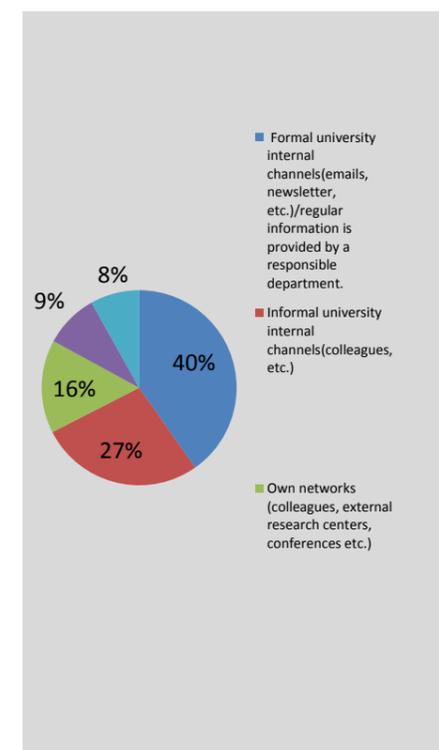
<u>III . Research Proposals Applications & Grants' Management</u>

Does your university have written procedures/policies for research application and/or review of proposal applications?

As we can see that 75% answered YES ,10% answered NO and 15% don't know

Does your institution have a unit/office/department for supporting faculty/researchers in their grant management?

As we can see that 67% answered YES ,33% answered NO and 15% don't know
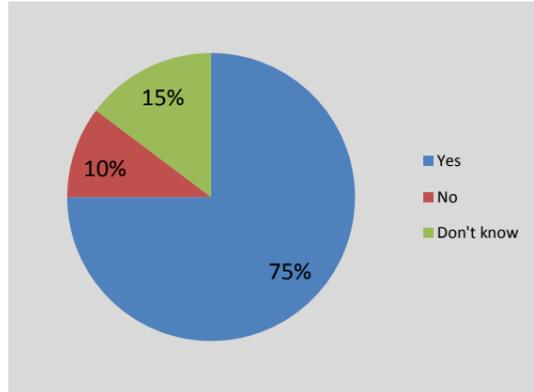
Who authorizes proposals' submission to funding agencies at your institution?

As we can see that 37% answered President's or Provost's office, 22% Dean of Faculty, 13% Department chair, 14% Director/leader of research unit/team, 2% Others and 22% don't know .
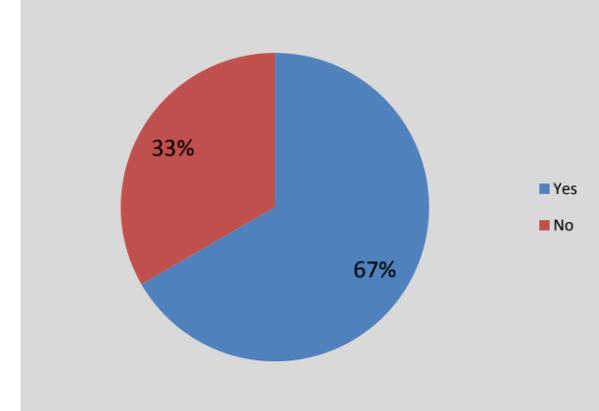
If You answered yes in either question 8 or 9, how does the unit/department/office assist you in this process?

As we can see that 17% answered Identify funding opportunities, 15% Proposal review, 12% Budget preparation, 13% Partner search, 16% Administration (provides administrative/legal documents & of the partners), 1% Grant management ,2% Financial management ,7% Negotiation of agreements /contracts/letters of award ,3% Liaison with funding agencies ,2% Coordination for reporting ,4% Follow up with principal investigator ,1% Closing the awards ,3% Facilitates audits ,4% Others .

Does your institution have a unit/office/department for supporting faculty in their proposal preparation and submission?

As we can see that 79% answered YES ,21% answered NO and 15% don't know
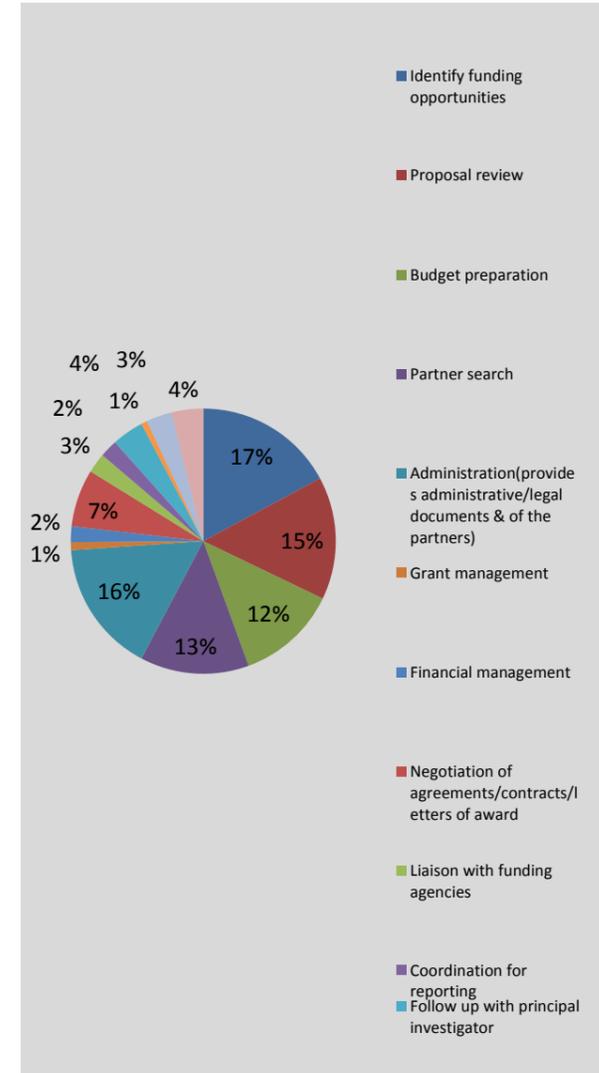
Please rate the performance of the above mentioned unit/office/department in facilitating your proposal submission?

As we can see that 41% answered extremely useful ,36% answered useful, 17% answered moderate and 6% not helpful.

- Extremely useful
- Useful
- Moderate
- Not helpful
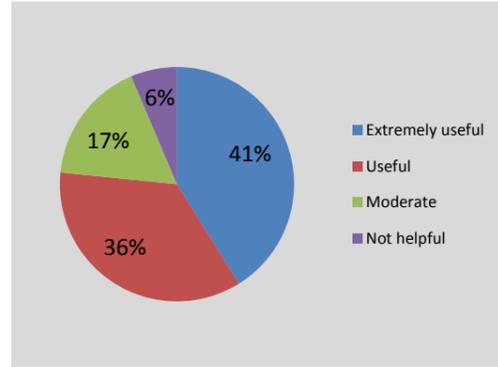
If there is NO such unit/office/department, do you think it would be useful to establish one?

As we can see that 92% answered YES and 8% answered NO .

- Yes
- No
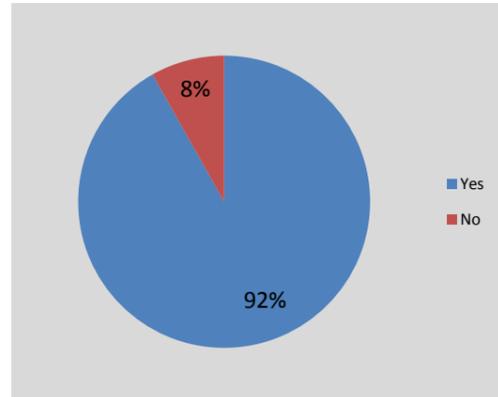
If yes, what services do you suggest should be offered?

As we can see that
13% answered Review of proposals
12% Dissemination of funding opportunities
8% Budget preparation
8% Partner search
8% Administration(documents of the university & of the partner
6% Grant management ,
8% Financial management ,
6% Negotiation of agreements/contracts/letters of award
,7% Drafting research agreements
,7% Liaison with funding agency , 6% Coordination for reporting follow up with principal investigator ,
7% Closing the award
And 4% Others

- Review of proposals
- Dissemination of funding opportunities
- Budget preparation
- Partner search
- Administration(documents of the university & of the partner
- Grant management
- Financial management
- Negotiation of agreements/contracts/letters of award
- Drafting research agreements
- Liaison with funding agency
- Coordination for reporting follow up with principal investigator
- Closing the award
- Others

Who is responsible for your grant financial management?

As we can see that 36% answered Central administration , 42% Each research group/researcher , 16% Special office/unit at the universityAnd 6% others.
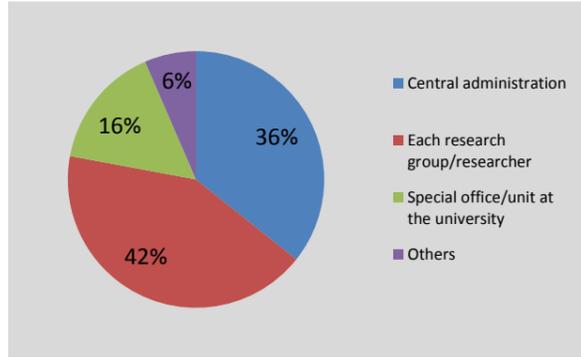
IV. Cooperation with Enterprises:

Do you have experience in collaborating with enterprises/companies/industries?

As we can see that 42% answered YES and 58% answered NO .
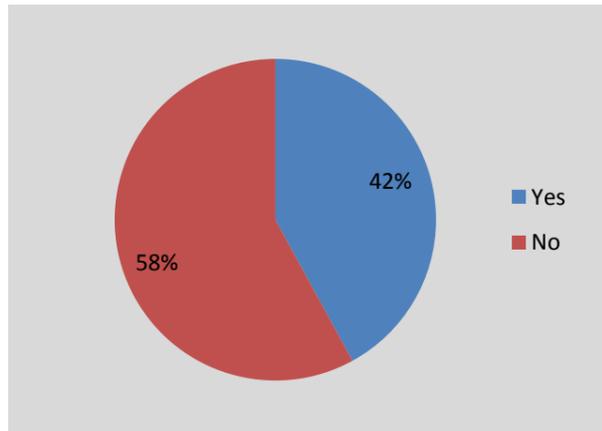
IF YES: How do usually get in touch with these cooperation partners?

As we can see that 36% answered Existing personal contacts of staff , 11% Conferences/fairs , 11% Visits/travels , 4% Through the university unit in charge , 22% E-mail/mail/telephone
 and 16% Other .
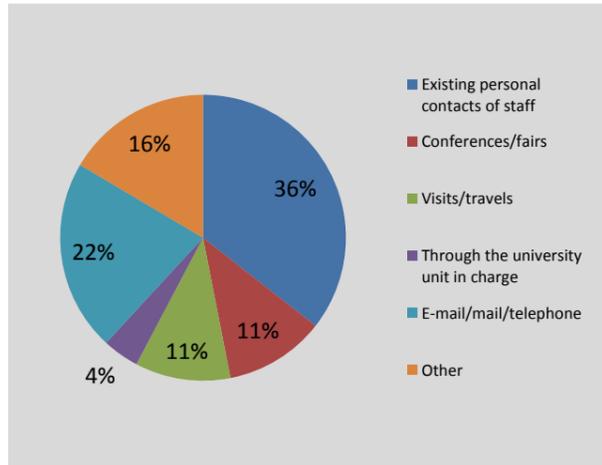
What are the most frequent activities YOU carry out in cooperation with enterprises? Please estimate in percentage, e.g. 80% of all cooperation is in the area of student placements

As we can see that 25% answered Minor Consulting/Technical assistance , 25% Research projects, 25% Student placements, 23% Exchange of staff
 and 2% others .
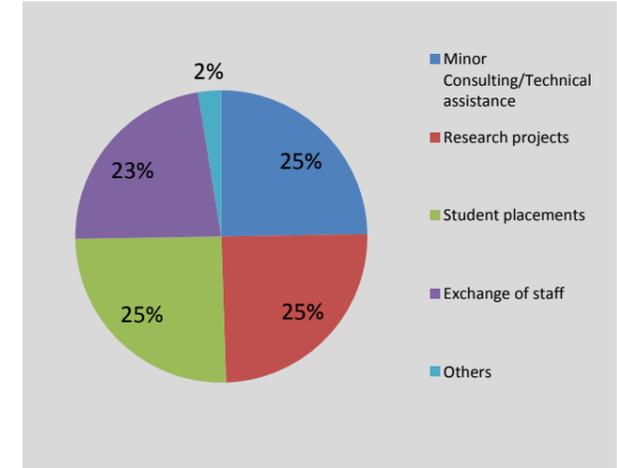
Do you have a formal cooperation agreement/contract signed between you and any enterprise or between the university and enterprise?

As we can see that 27% answered YES and 73% answered NO .
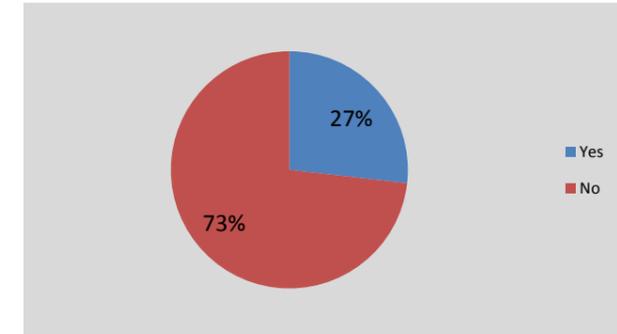
V. Technology Transfer and Intellectual Property Management:

When starting a research cooperation (e.g. with an enterprise, or other universities)do you consider Intellectual Property (IP)issues?

As we can see that 57% answered YES and 43% answered NO .
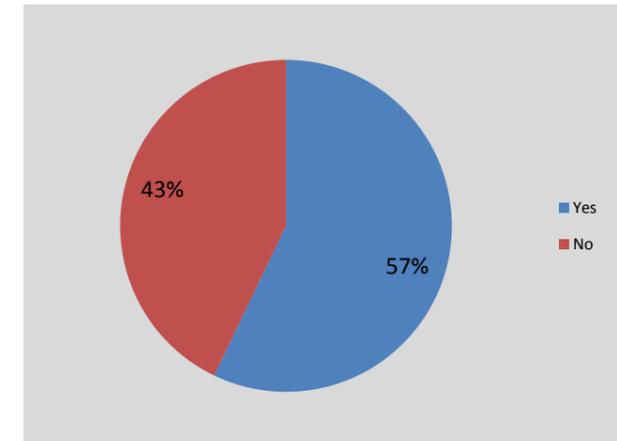
Within any research cooperation/project, did you/do you face any problems concerning Intellectual Property issues?

As we can see that 10% answered YES and 90% answered NO .

Are there any courses on entrepreneurship to students?

As we can see that 58% answered YES and 42% answered NO .
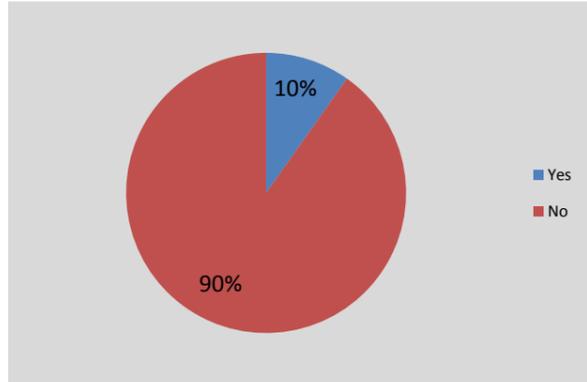
Are there any published policies, procedures on Intellectual Property issues at your University?

As we can see that 63% answered YES and 37% answered NO .

If not, do you think it would be useful to offer such courses?

As we can see that 90% answered YES and 10% answered NO .
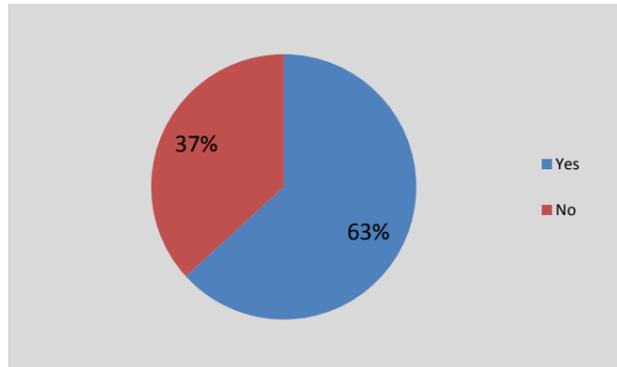
Have you attended any seminars or workshops or training on intellectual property & Technology Transfer management?

As we can see that 26% answered YES and 74% answered NO .
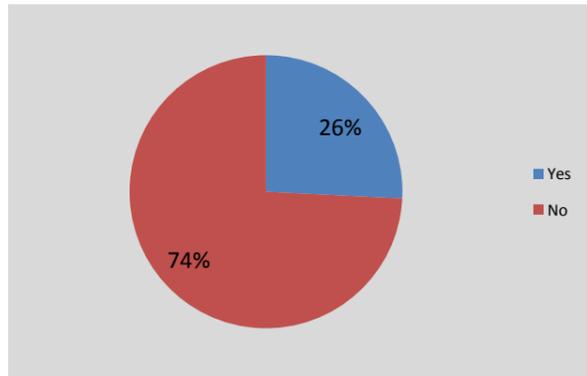
If NO: would you be interested?

As we can see that 72% answered YES and 28% answered NO .
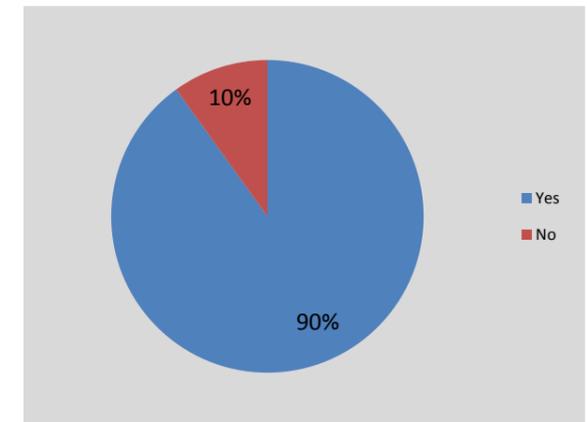
Overall, what type of intellectual property rights (IPR) and/or related tools and practices are used by YOU regularly?

As we can see that :
17%Use of patent information for research (e.g. state-of-the-art search)
11%Use of patent information for education

10%Patent protection of research results

9%Trademark protection

8%Utility model protection of research results

13%Design protection

17%Copyright

6%Confidentiality agreements

3%Licensing-out of IP rights owned by the institution to third parties

4%Licensing-in IP rights from third parties for further research

1%None
1% others

Legend:
- Use of patent information for research (e.g. state-of-the-art search)
- Use of patent information for education
- Patent protection of research results
- Trademark protection
- Utility model protection of research results
- Design protection
- Copyright
- Confidentiality agreements
- Licensing-out of IP rights owned by the institution to third parties
- Licensing-in IP rights from third parties for further research
- None
- Others

Did you file any patents in the past years

As we can see that 8% answered YES and 92% answered NO .

- Yes
- No
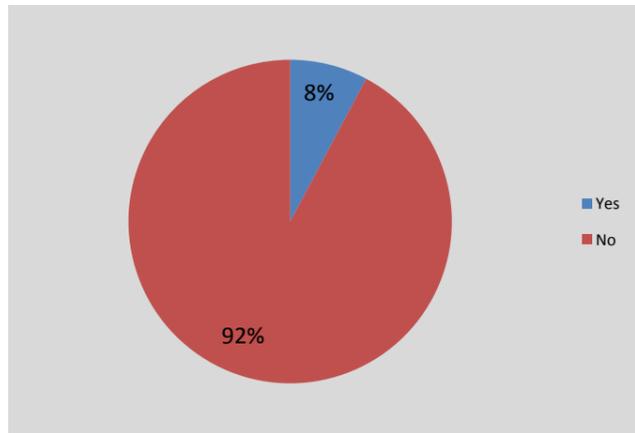
Please indicate if you ever participated in one of the following technology transfer transactions:

As you can see that 20% answered Licensing out IPR, 12%
Sale of IPR, 17% Spin-off creation/new business created
And 51% other.

- Licensing out IPR
- Sale of IPR
- Spin-off creation/new business created
- Other
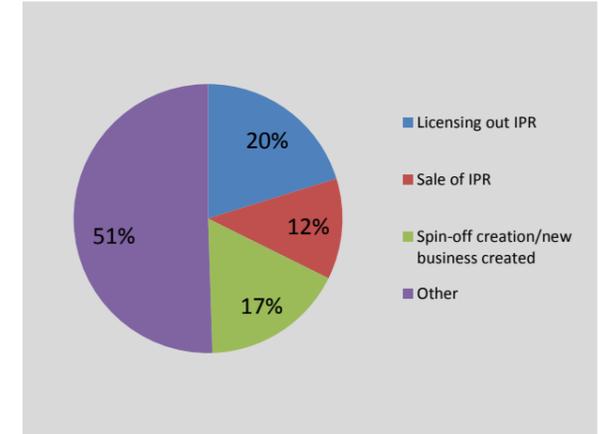
Did you receive any information about Intellectual Property Rights issues in your University?

As you can see that
40% No measures taken
19%Training courses
14%Information published at institution website
9%Printed material(leaflets, brochures..) distributed among staff
9%E-mailing(e.g. newsletter, including new developments)
9%Other

- No measures taken
- Training courses
- Information published at institution website
- Printed material(leaflets, brochures..) distributed among staff
- E-mailing(e.g. newsletter, including new developments)
- Other
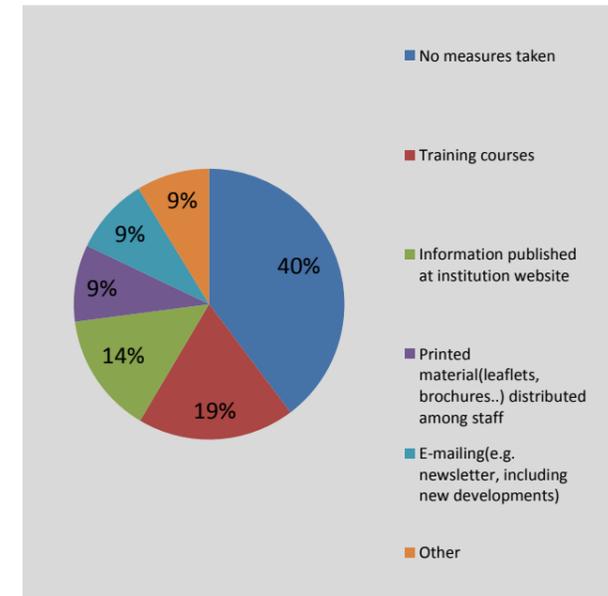
Does your institution have special unit/office/department which supports you in the process of technology transfer?

As we can see that 16% answered YES and 84% answered NO .

- Yes
- NO
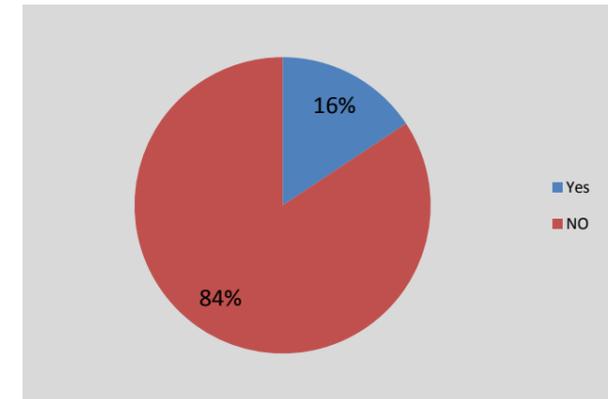
If YES, how does the unit/office/department assist you?

13%Use of patent information for research (e.g. state-of-the-art search)
14%Use of patent information for education
8%Patent protection of research results
8%Trademark protection
7%Utility model protection of research results
9%Design protection
13%Copyright
6%Confidentiality agreements
5%Licensing-out of IP rights owned by the institution to third parties
7%Licensing-in IP rights from third parties for further research
5%None
5%Other

If there is NO such a unit/office/department, do you think it would be useful to establish one?

As we can see that 93% answered YES and 7% answered NO .

If you have used their services, please rate the performance of the above mentioned unit/office/department

As you can see that32% Extremly useful, 18% useful, 38% moderate and 12% not helpful.
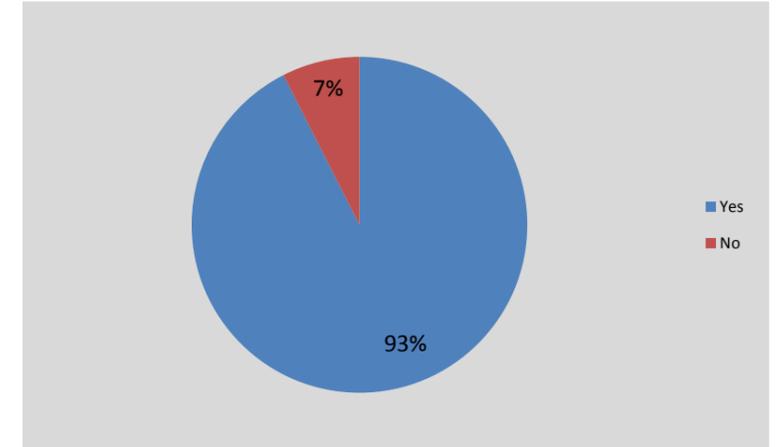
If YES, what services do you think shall be offered?

11%Use of patent information for research (e.g. state-of-the-art search)
10%Use of patent information for education
9%Patent protection of research results
9%Trademark protection
9%Utility model protection of research results
9%Design protection
10%Copyright
9%Confidentiality agreements
9%Licensing-out of IP rights owned by the institution to third parties
8%Licensing-in IP rights from third parties for further research
4%None
3%Other
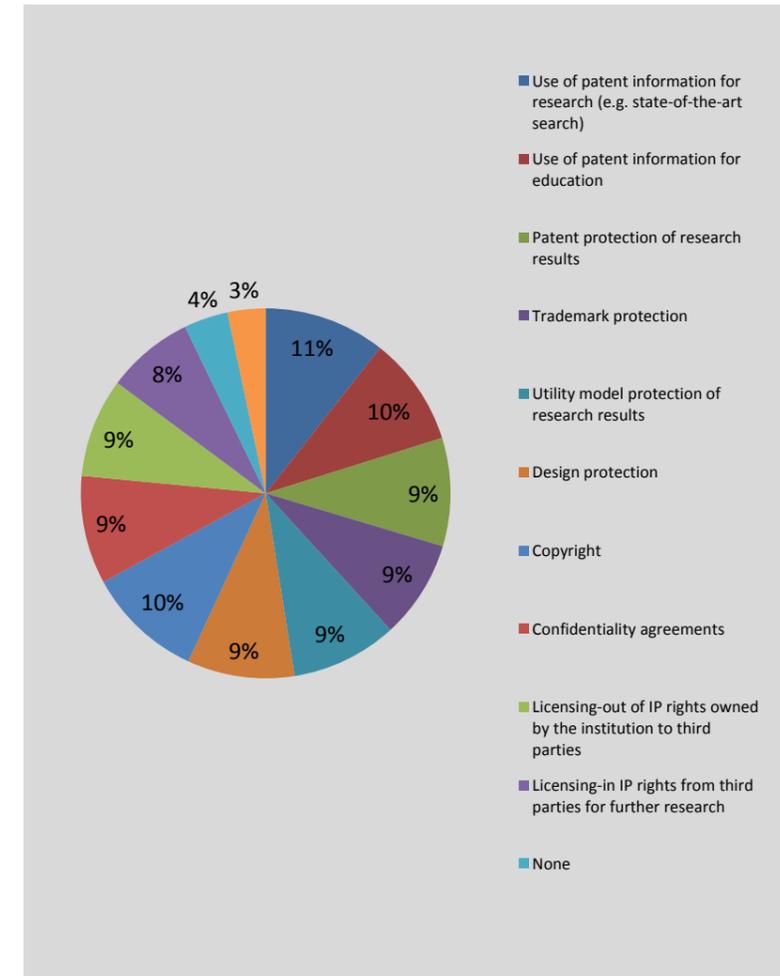
Does your institution's strategy include contributing to the economic development of your region or country?

As we can see that 78% answered YES and 22% answered NO .
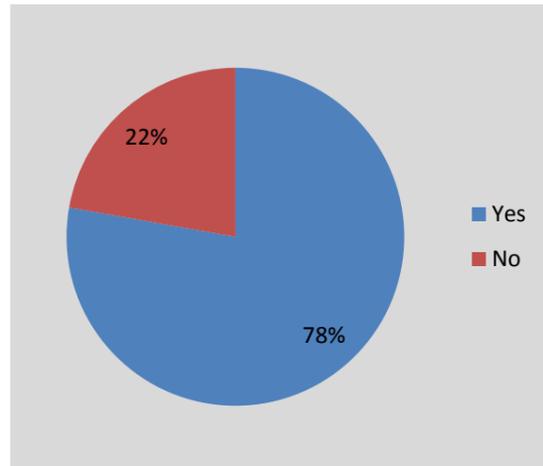
Is it part of your institutional strategy/mission to cooperate with enterprises?

As we can see that 73% answered YES ,and 22% answered NO and 5% others.
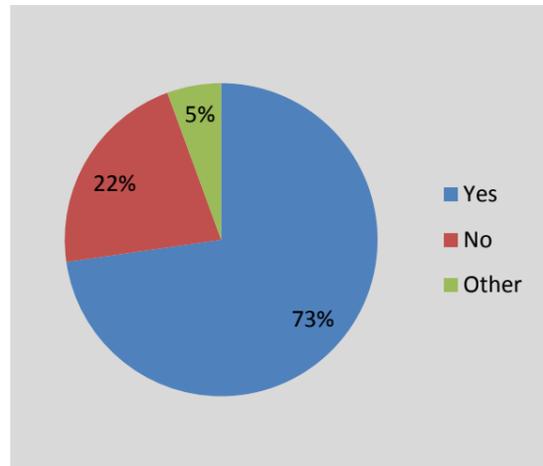
What approach does your institution adopt in terms of cooperation with enterprises?

As we can see that 37% answered Proactive, 24% Passive, and 39% answered No specific approach .
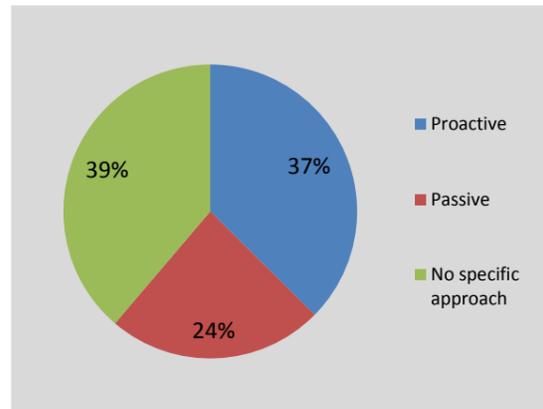
Are there any of the following measures in place to facilitate relationships and dialogue with enterprises at your institution?

15%Organization of opportunities to meet
10%Exchange of professionals or industrial fellowships
14%University-industry schemes with placement of students in industry
10%Promotion of university-generated ideas within indusrty
7%Solely industry-funded university research and education projects
8%Jointly owned or shared laboratory facilities
3%Industry link/liaison unit within university
2%Industry link/liaison unit as separate legal unity
1%Joint companies
8%Science parks
8%University consultation services for industry
2%Curriculum development boards with industry participation
7%Membership of representatives from the productive sector in university decision-making bodies
2%Jointly owned agencies for commercialization of research results
3% Centers which provide skills development services
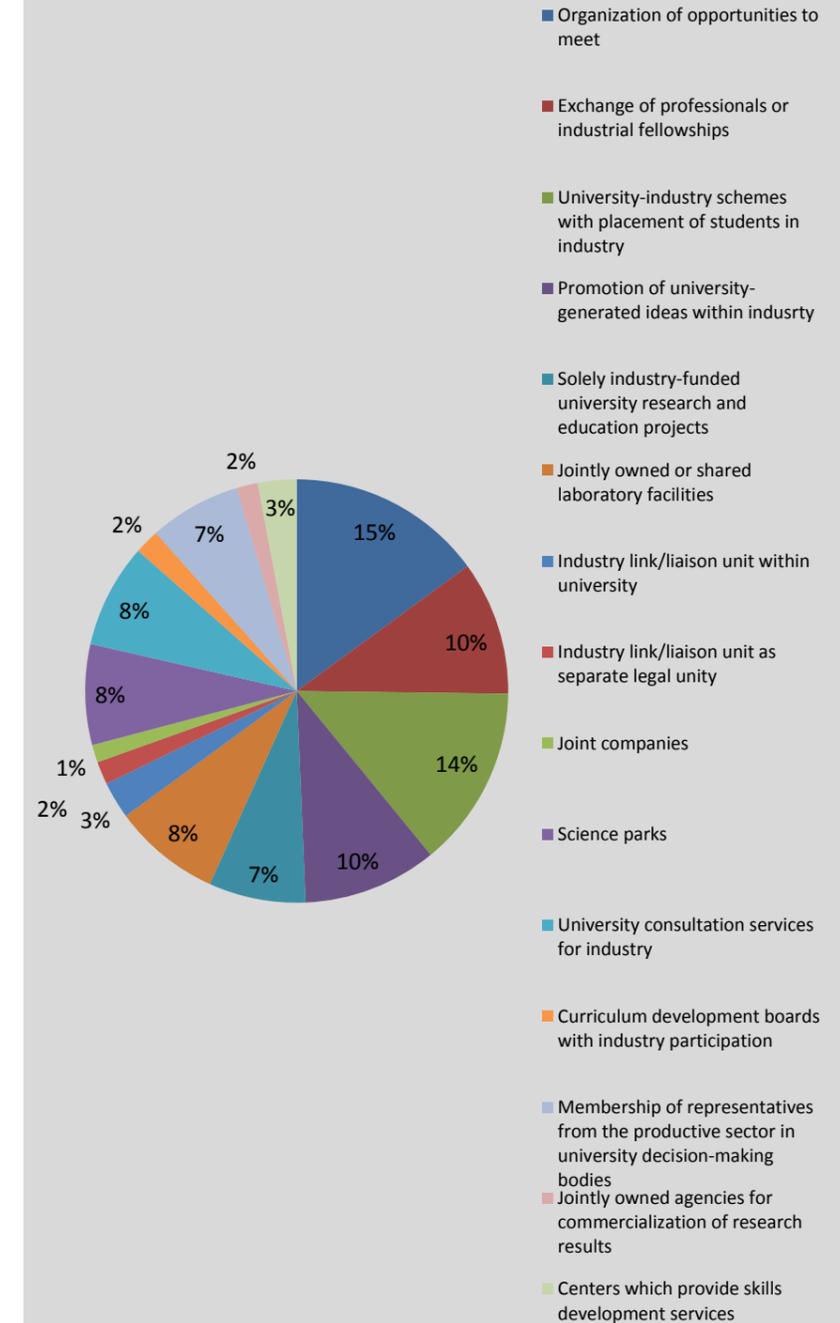
What is the geographical origin of the enterprises with which you cooperate with most?

As we can see that 49% answered Local, 24% National, 12% EU and 15% answered International.
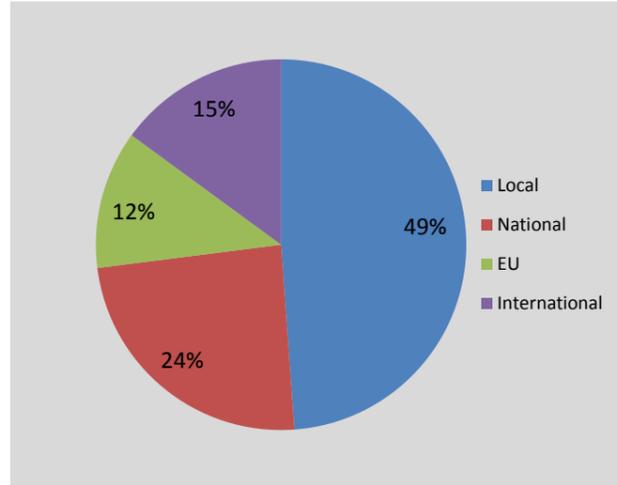
With what type of enterprises do you work most?

As you can see that 77% answered SMEs, 10% MNCs and 13% Other.
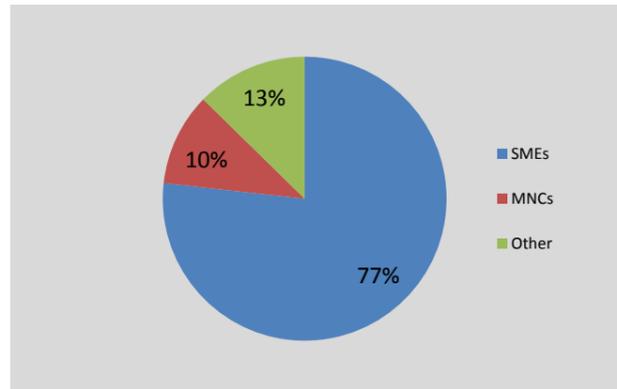
What are the most frequent activities carried out in cooperation with enterprises?

19%Consulting
11%Technical assistance (laboratory analysis...)
27%Cooperative research projects
6%Contract Research projects (costs born entirely by firm)
25%Student placements
3%Exchange of staff
5%Studies carried out for firms
4%Other
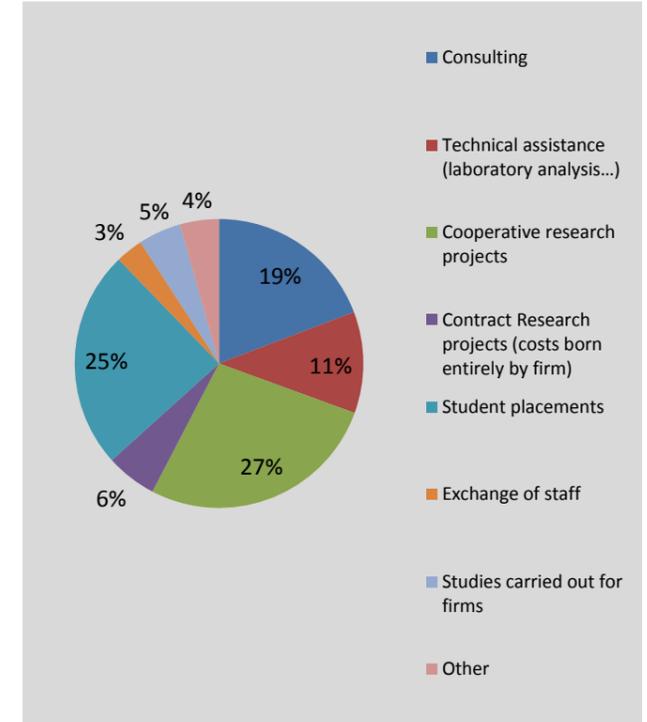
Are you cooperating with the local Chamber of commerce?

As we can see that 54% answered YES and 46% answered NO .
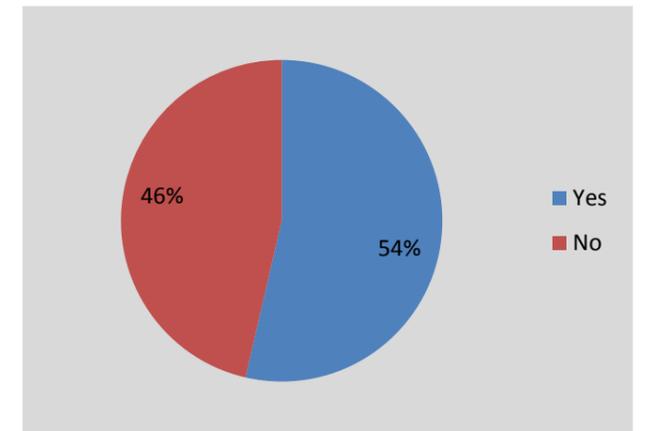
What key skills for university personnel do you think are necessary for greater research &enterprise cooperation?

As you can see that 18% IPR knowledge, 29% Specific industry knowledge, 16% Specific technical knowledge and 37% Communicational skills.
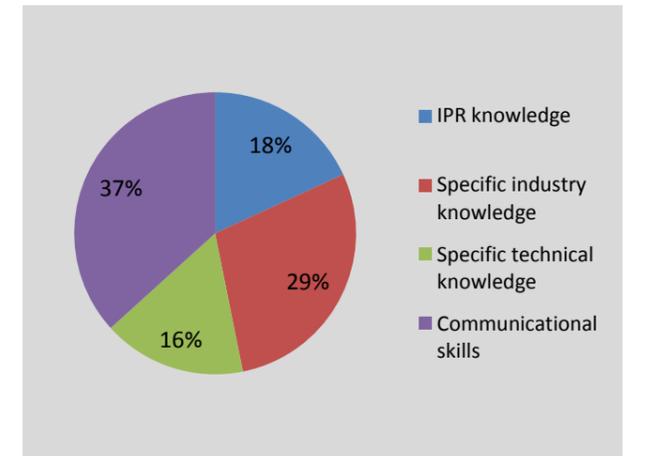
Does your institution have any measures in place to help students find sponsors for research initiatives and ideas?

As we can see that 37% answered YES and 63% answered NO .
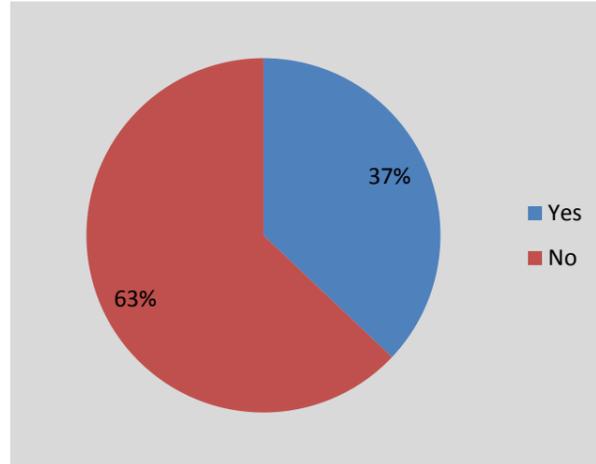
Is there any structure (office, unit) in place to help students find sponsors for research initiatives?

As we can see that 31% answered YES and 69% answered NO .
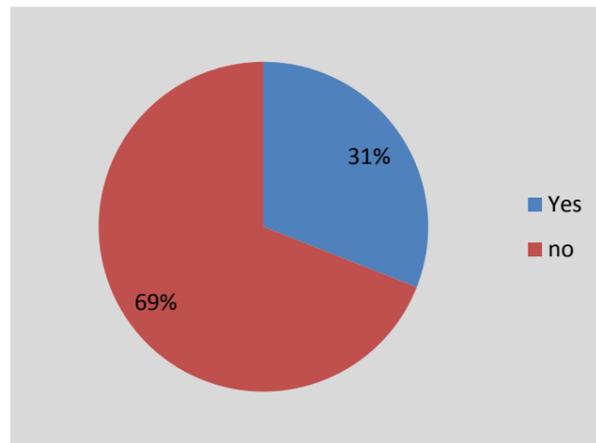
At which level of studies do you think students could begin to collaborate with sponsors for research initiatives and ideas?

As we can see that 38% Bachelors, 34% Masters,17% Doctorate and 11% Doesn't matter.
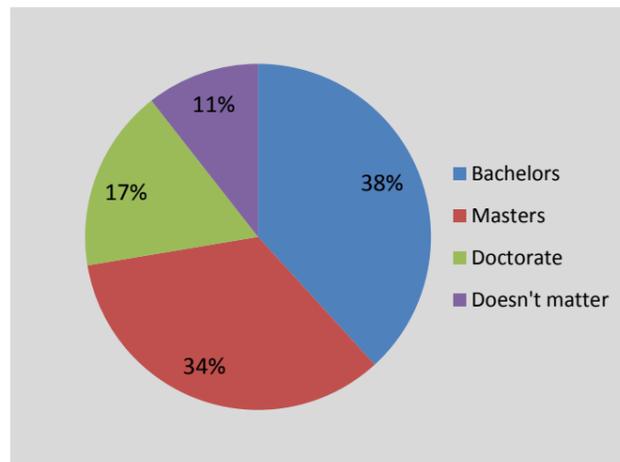
Does your institution have measures in place to help researchers or students set up a new enterprise?

As we can see that 69% answered YES and 31% answered NO .
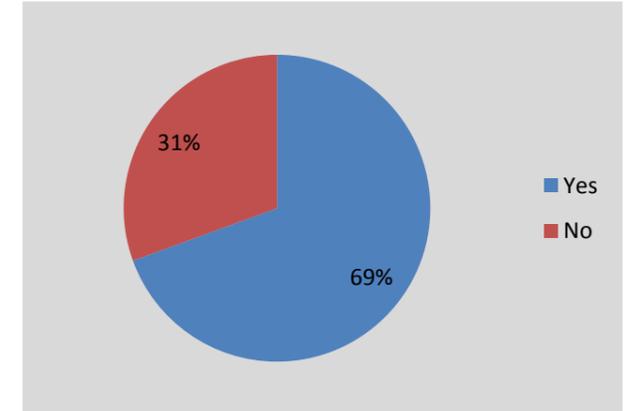
If yes, please specify which measures and activities?
As you can see that
21%Courses on how to set up enterprises, draft business plans
15%Business Plan Competitions
26%Personalized assistance and consulting
7%Fundraising (helping find start capital possibilities)
13%Incubation facilities (rooms, office equipment etc for rent)
8%Expert advice during the first years after the firm creation
10%Other
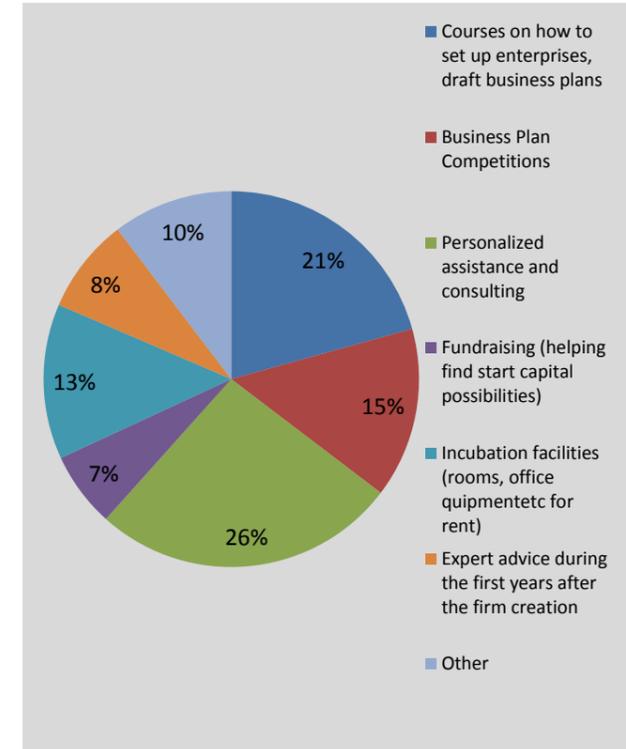
How are these measures/ activities being financed?

As you can see that 69%
University general budget, 21%
Students/researchers have to pay for the services offered and 10% other
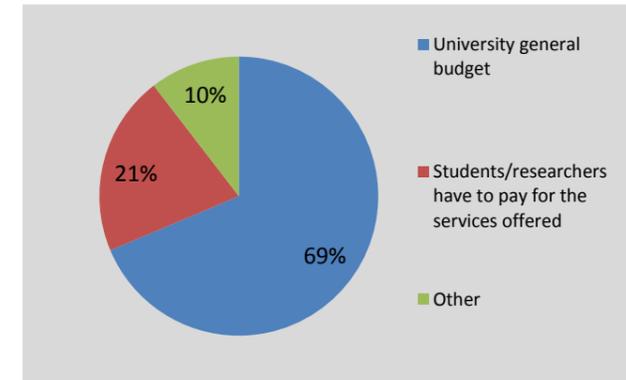
Who is in charge of entrepreneurship support in your institution?

as you can see that 9%One specific position (person) in charge, 19%
Dedicated start-up support office
, 12% Incubation facilities
, 41%No responsible person or unit
, 19% Other

Legend:
- One specific position (person) in charge
- Dedicated start-up support office
- Incubation facilities
- No responsible person or unit
- Other

9%
19%
19%
12%
41%

Is your institution involved in any joint research activities or projects with enterprises?

As we can see that 71% answered YES and 29% answered NO .

Legend:
- Yes
- No

29%
71%
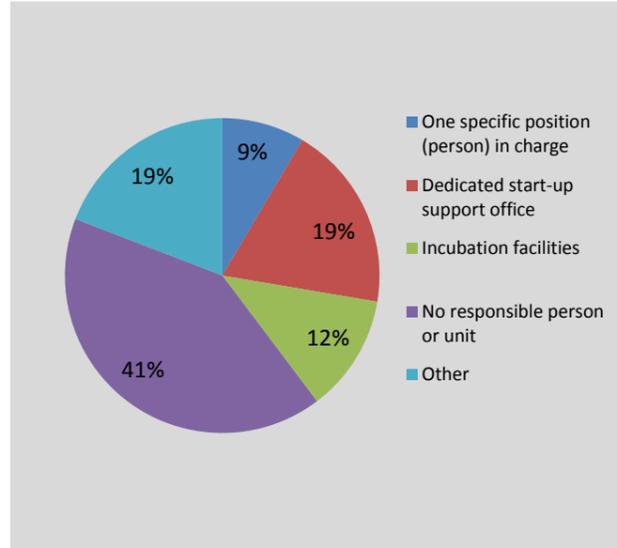
Does the institution have access to funding for research activities from external resources (e.g. national or international programmes)?
As you can see that 43%Public National sources/Programmes
, 8%Public Regional sources/Programmes
, 36%   Public International   ources /Programmes, 13% Private funding sources

Legend:
- Public National sources/Programmes
- Public Regional sources/Programmes
- Public International sources/Programmes
- Private funding sources

43%
8%
36%
13%

How are these projects being financed?

14%By enterprises
22%National funds
39%European Union funds
24%University's own fund
1%Other

Legend:
- By enterprises
- National funds
- European Union funds
- University's own fund
- Other

1%
14%
22%
39%
24%

Does your institution have any of the following measures in place to coordinate research activities of your institution with the needs and demands of local enterprises?

25%Analysis of technology demands and needs of enterprises
20%Analysis of the universitites research offer
10%Dialogue with enterprises or chambers ot commerce
39%None
6%Other

Legend:
- Analysis of technology demands and needs of enterprises
- Analysis of the universitites research offer
- Dialogue with enterprises or chambers ot commerce
- None
- Other

6%
25%
20%
10%
39%

Which of the following knowledge transfer services are provided by the office?

As you can see that :
20%Intellectual property protection through applying for patents, registering designs…

16%Licensing activities

15%Creating or supporting spin-off companies to exploit the research results

32%Providing incubator facilities to companies

7%Negotiating government-sponsered research contracts or grants

5%Negotiating consulting contracts or research collaboration contracts with firms

5%Managing a seed capital fund

- Intellectual property protection through applying for patents, registering designs…
- Licensing activities
- Creating or supporting spin-off companies to exploit the research results
- Providing incubator facilities to companies
- Negotiating government-sponsered research contracts or grants
- Negotiating consulting contracts or research collaboration contracts with firms
- Managing a seed capital fund

Does the institution have a strategy / policy / guidelines regarding Intellectual Property issues?

As we can see that 72% answered YES and 28% answered NO .

- Yes
- No
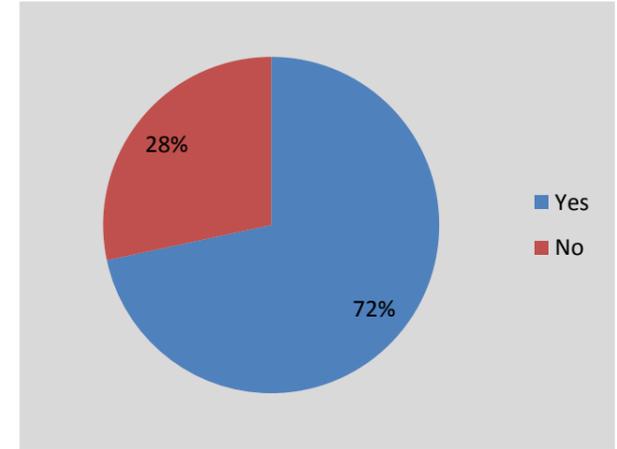
Who undertakes the IP management function at the institution?

As you can see that:
65%There is no specific IP management function

15%University Internal unit/office/department

4%Separate entity (e.g. Science Park, Foundation) owned by the institution

8%External company/expert (e.g. IP management consultancy, attorney) subcontracted on case to case basis

8%Other

- There is no specific IP management function
- University Internal unit/office/department
- Separate entity (e.g. Science Park, Foundation) owned by the institution
- External company/expert (e.g. IP management consultancy, attorney) subcontracted on case to case basis
- Other
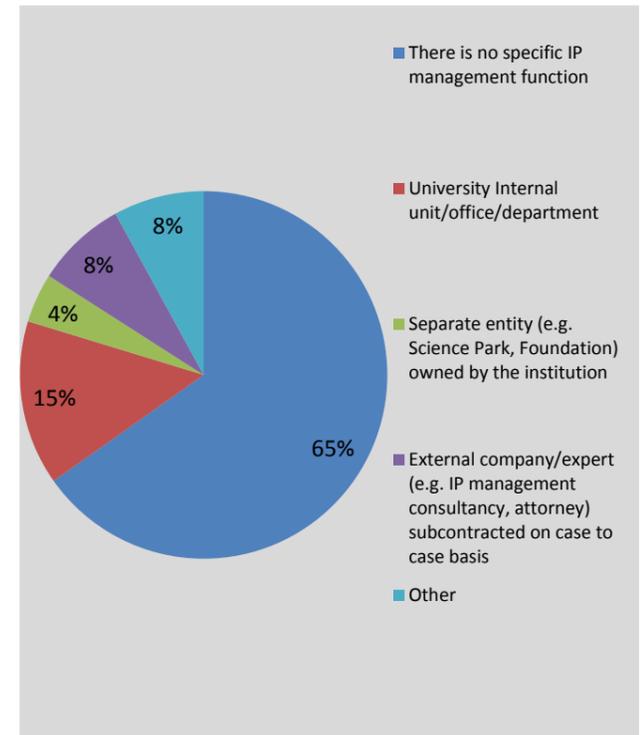
Do you conduct research at your organisation?

As we can see that 36% answered YES and 4364% answered NO .
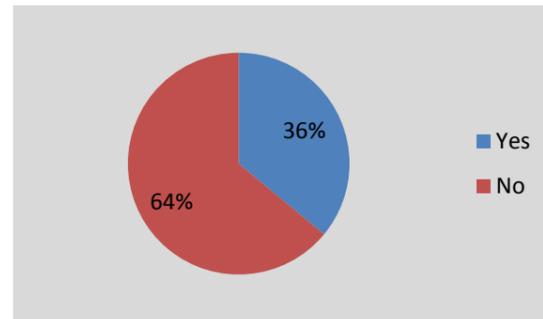
If yes, does your company collaborate with the following entities in doing research?

As we can see that 5753% answered YES and 47% answered NO .
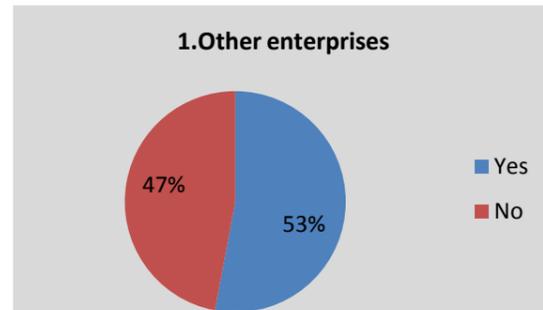
1.Other enterprises

As we can see that 48% answered YES and 52% answered NO .

2.Universities/ Higher Education Institutions (HEIs)

As we can see that 52% answered YES and 48% answered NO .

3.Research organisations
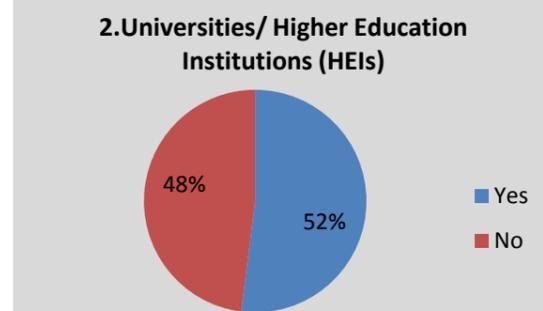
Patents – national (registered in your country of operations)

As we can see that 37% answered YES and 63% answered NO .
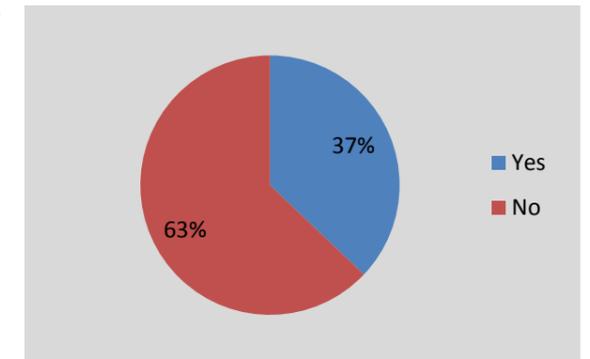
Patents – international (registered in other countries, PCT, etc)

As we can see that 37% answered YES and 63% answered NO .
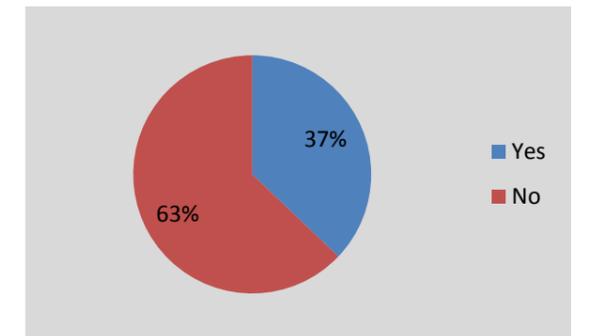
Utility models (or similar forms of protection)

As we can see that 37% answered YES and 63% answered NO .
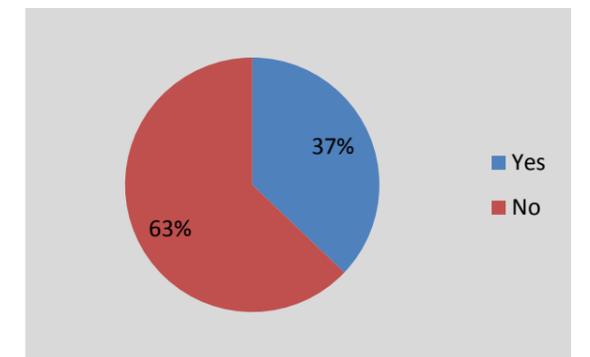
Trade secrets / Know-how

As we can see that 37% answered YES and 63% answered NO .
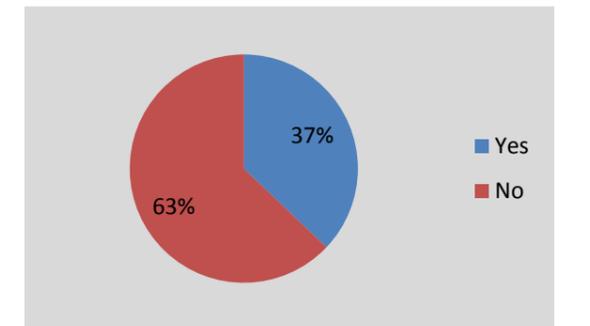
Plant variety rights (Plant breeders' rights)

As we can see that 37% answered YES and 63% answered NO .

Trade marks

As we can see that 45% answered YES and 55% answered NO .
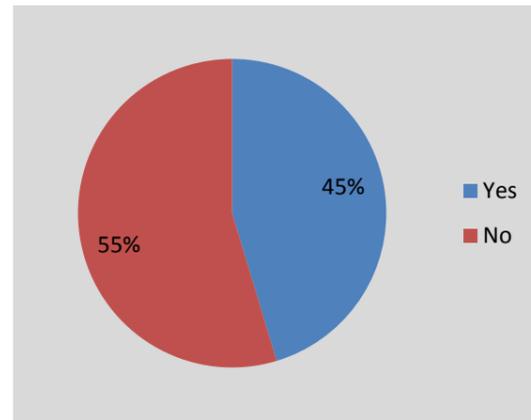
Trade names

As we can see that 39% answered YES and 61% answered NO .
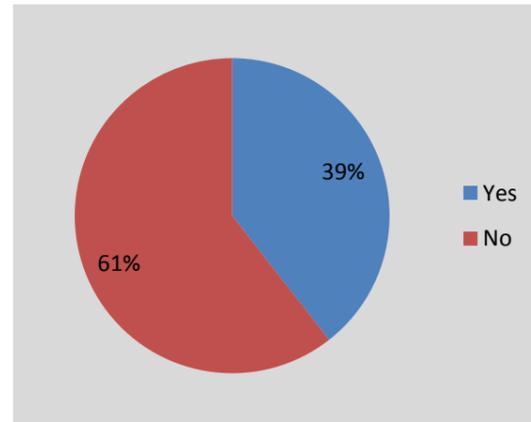
Geographical indications, designations of origin

As you can see that 39% answered YES and 61% answered NO.
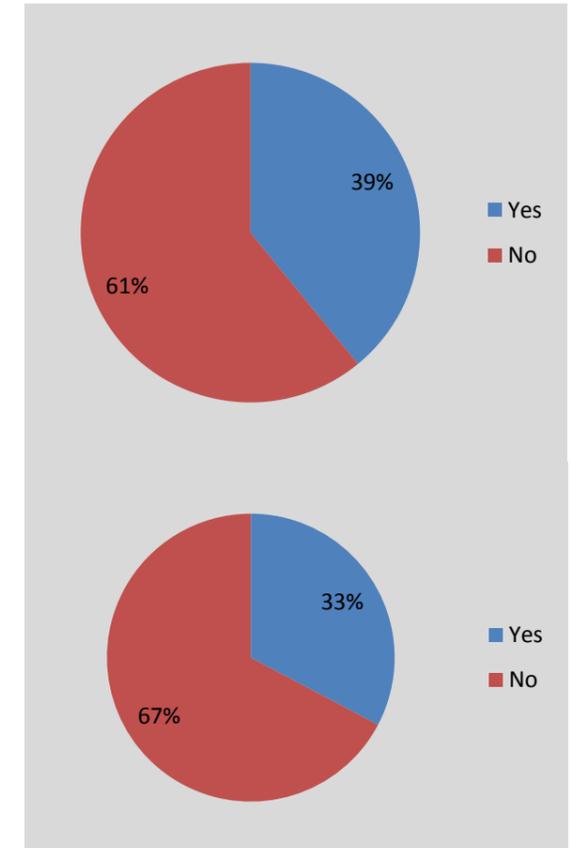
Industrial designs (design patents)

As you can see that 33% answered YES and 67% answered NO.
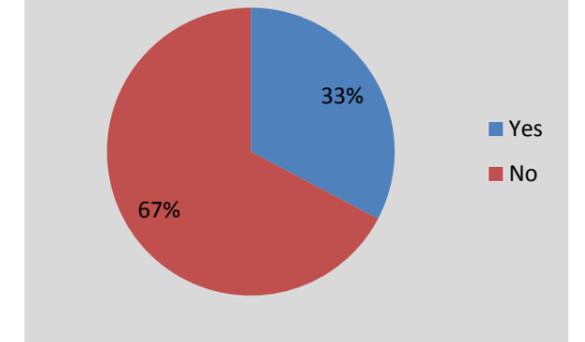
Topographies of semiconductor products (mask works)

As you can see that 33% answered YES and 67% answered NO.
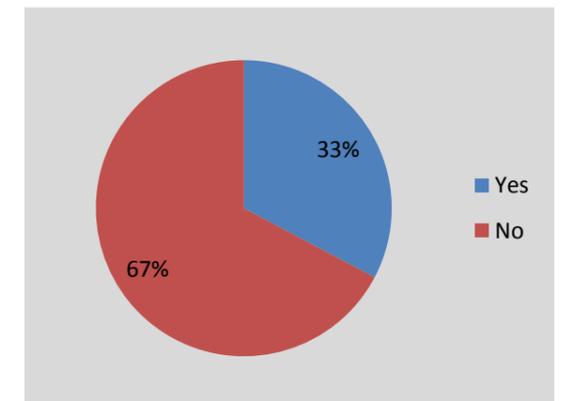
Copyright & related rights

As you can see that 339% answered YES and 67% answered NO.
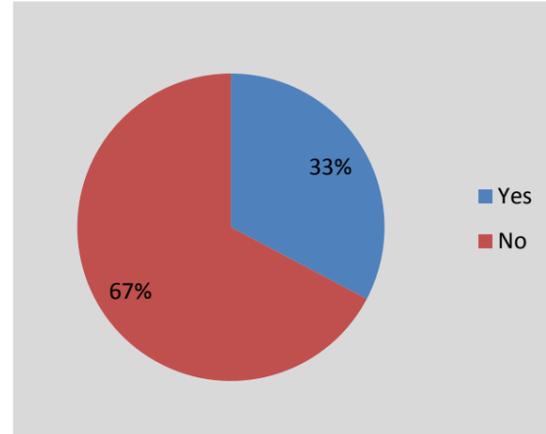
R&D contracts

As you can see that 339% answered YES and 67% answered NO.
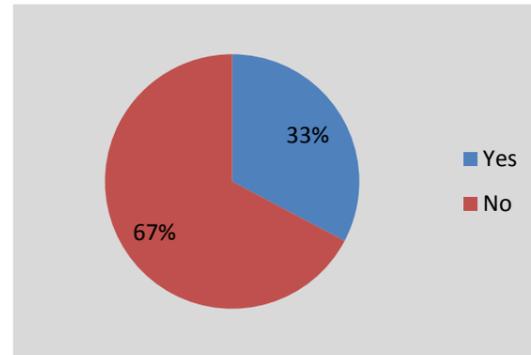
IP rights exploitation
(TT agreements-licensing, assignments)

As you can see that 33% answered YES and 67% answered NO.
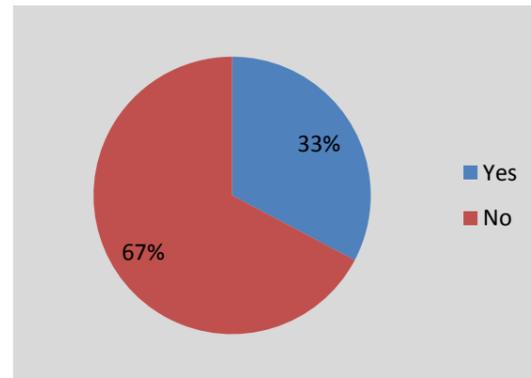
How important do you think IP is for your business?
(on a scale of 1-5 with 1 = least relevant and 5 = most relevant)

As you can see that 17% answered Not relevant, 33% least relevant, 18% Relevant, 14% Highly relevant and 18% Most relevant.
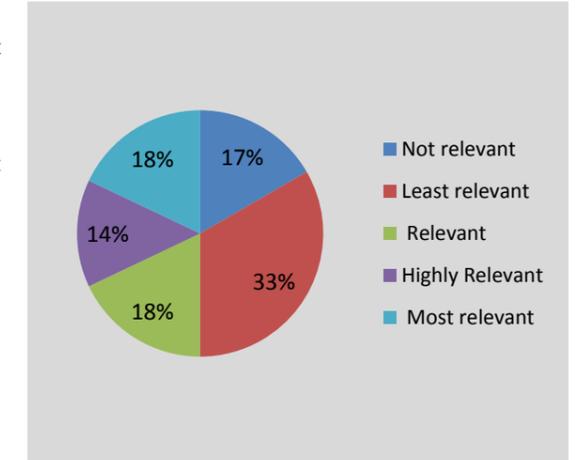
Do you have any innovation that you are particularly proud of / or that is key for your business success?

As you can see that 46% answered YES and 54% answered NO.
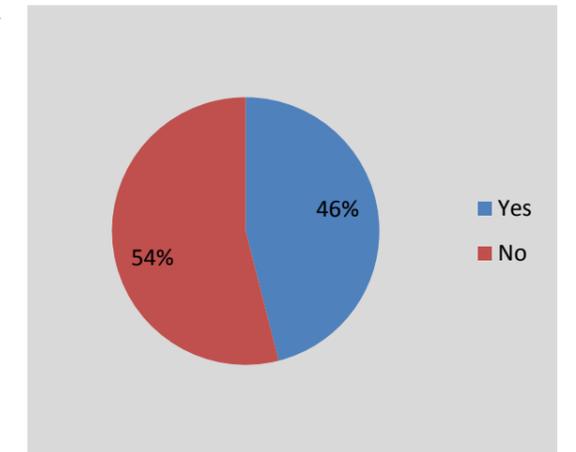
How important do you think the energy efficiency and the use of clean energy is for your business?
(on a scale of 1-5 with 1 = least relevant and 5 = most relevant)
As you can see that 6% answered Not relevant, 31% least relevant, 31% Relevant, 18% Highly relevant and 14% Most relevant.
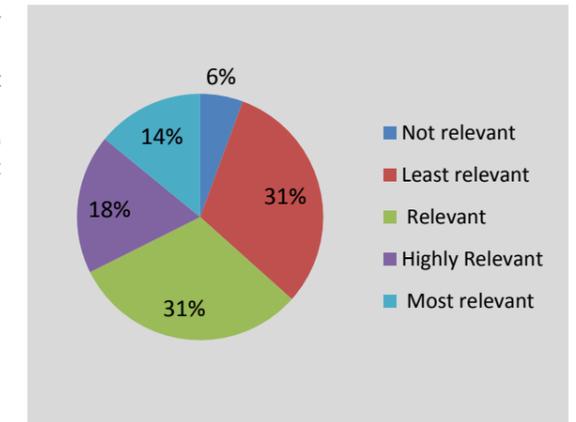
Does your company use patent databases for technical information for your business strategy?

As you can see that 35% answered Yes, regularly, 58% Yes, Occasionally and 7% No not atall

- Yes, regularly
- Yes, occasionally
- No, not at all

7%
35%
58%
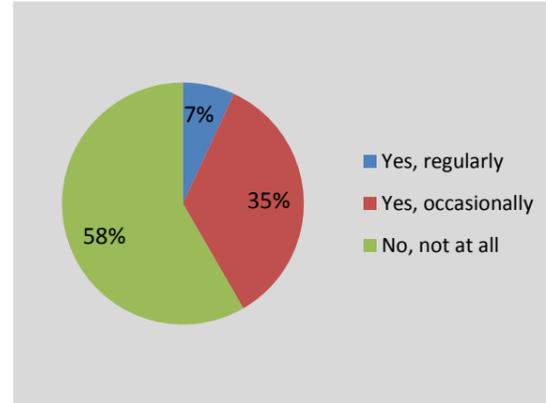
Which of the following sources of technical information do you regularly use?

Jamaican Intellectual Property Office – JIPO

As you can see that 38% answered YES and 62% answered NO.

38%
62%

- Yes
- No
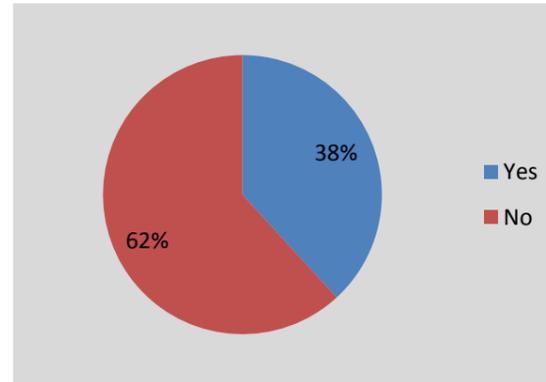
United States Patent and Trademark Office – USPTO

As you can see that 38% answered YES and 62% answered NO.

38%
62%

- Yes
- No
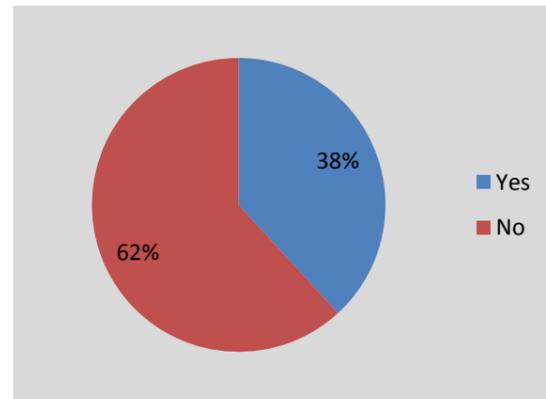
Espacenet

As you can see that 38% answered YES and 62% answered NO.

38%
62%

- Yes
- No
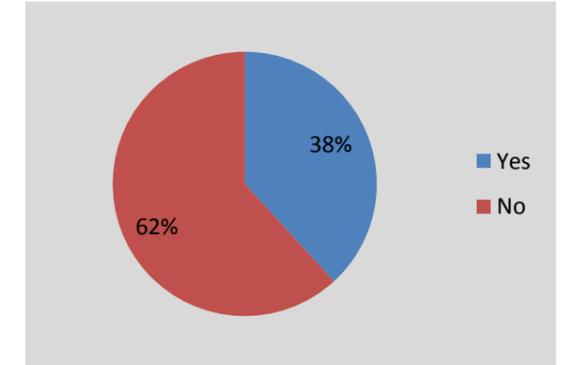
World Intellectual Property Organization – WIPO

As you can see that 38% answered YES and 62% answered NO.

38%
62%

- Yes
- No
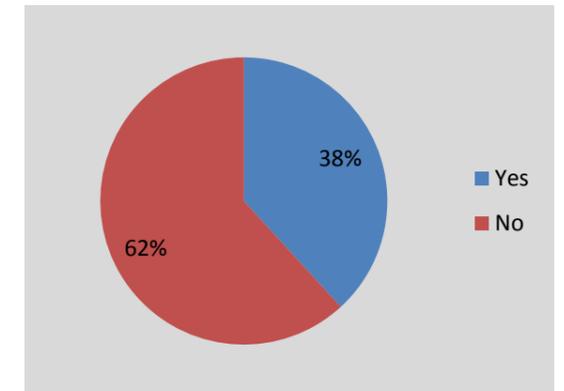
Oficina Nacional de Propiedad Intelectual – ONAPI

As you can see that 26% answered YES and 74% answered NO.

26%
74%

- Yes
- No
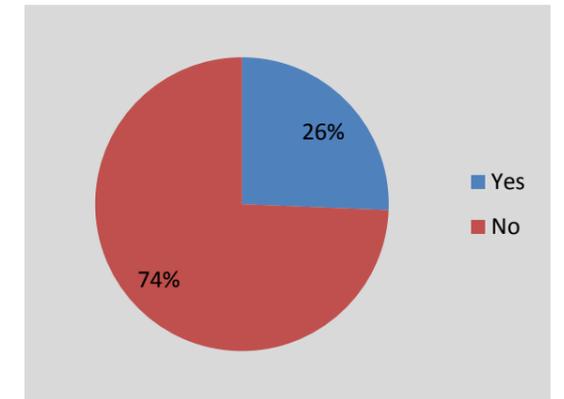
Textbooks

As you can see that 26% answered YES and 74% answered NO.

26%
74%

- Yes
- No
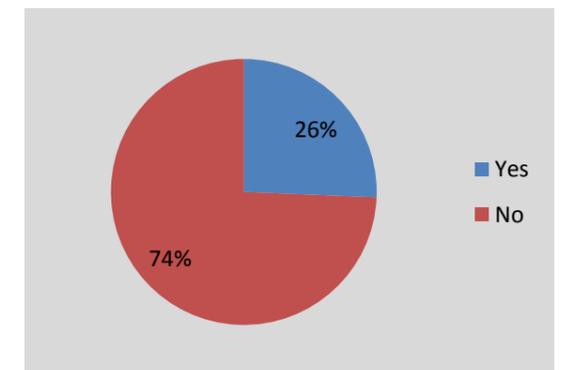
Research journals

As you can see that 26% answered YES and 74% answered NO.
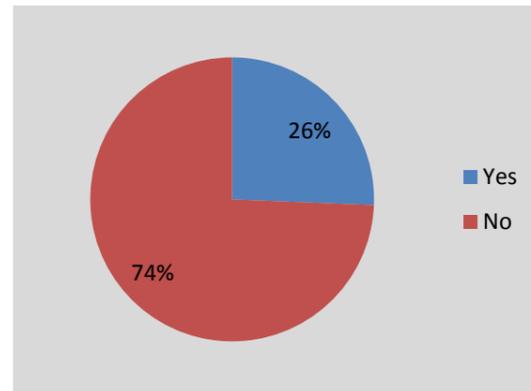
Use of patent databases for technical information and research

As you can see that 82% answered YES and 18% answered NO.
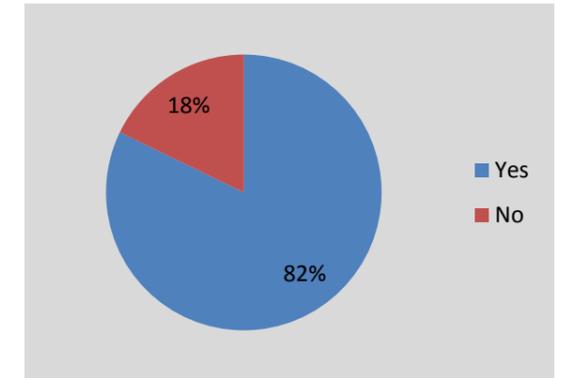
Do you think your current or future staff should be trained in the areas mentioned below?

Entrepreneurship and business creation

As you can see that 66% answered YES and 34% answered NO.
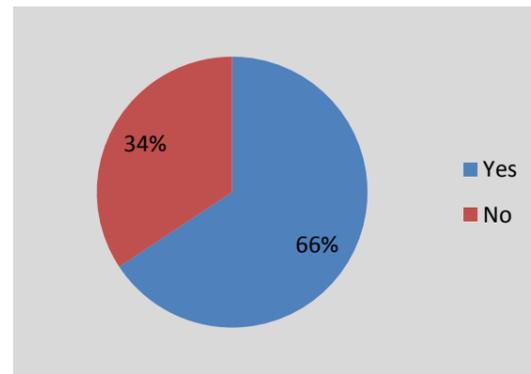
Innovation management

As you can see that 52% answered YES and 48% answered NO.
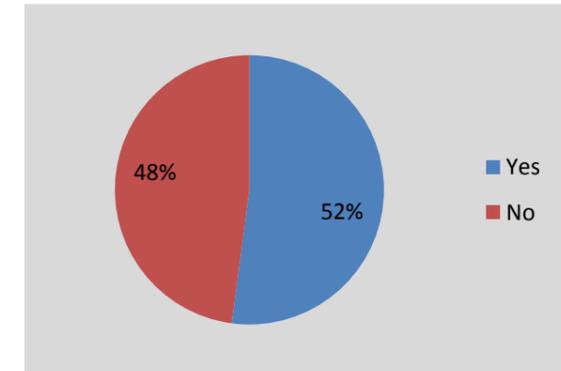
Research – qualitative and quantitative (how to do research)

As you can see that 83% answered YES and 17% answered NO.
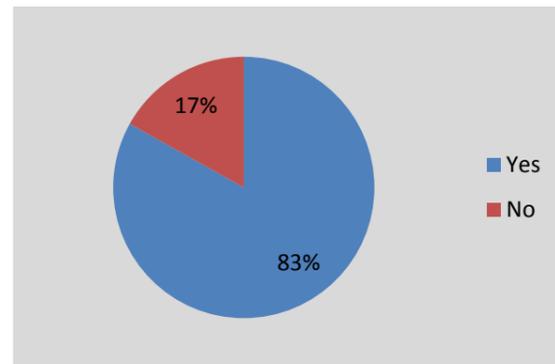
Change management

As you can see that 59% answered YES and 41% answered NO.
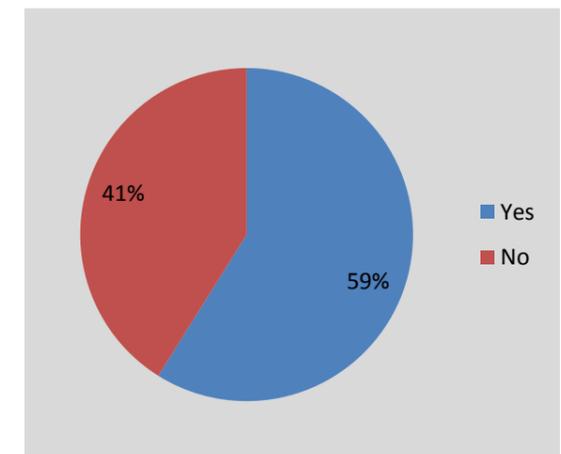
R&D contracts : Ensure your institution benefits adequately by intelligent contractual design

As you can see that 40% answered YES and 60% answered NO.
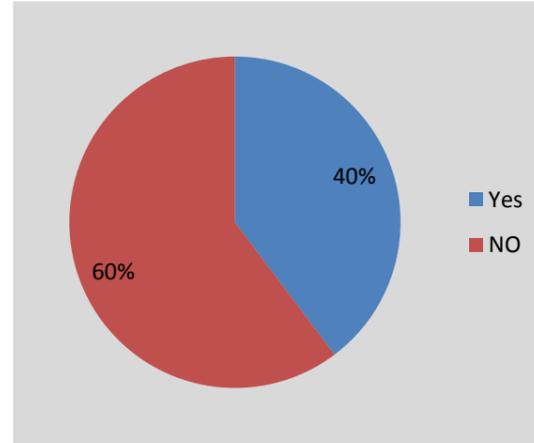
Intellectual Property Rights basic issues (patents, trade marks, geographical indications, copyright issues)

As you can see that 3843% answered YES and 57% answered NO.
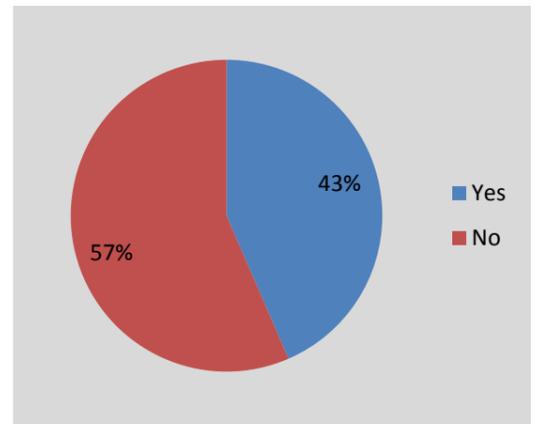
Determine and assert your ownership rights: Understand your partners & improve your negotiating position

As you can see that 42% answered YES and 58% answered NO.
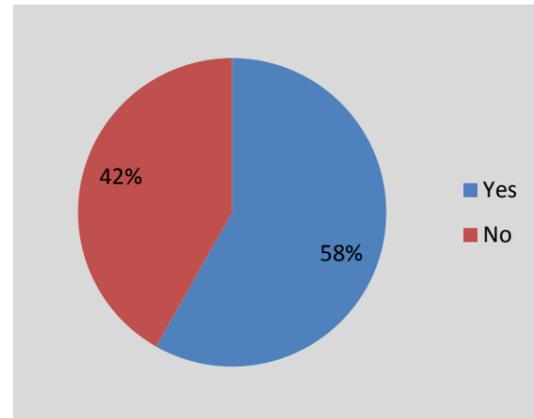
IP and business strategy: creating a business strategy based on IP

As you can see that 51% answered YES and 49% answered NO.
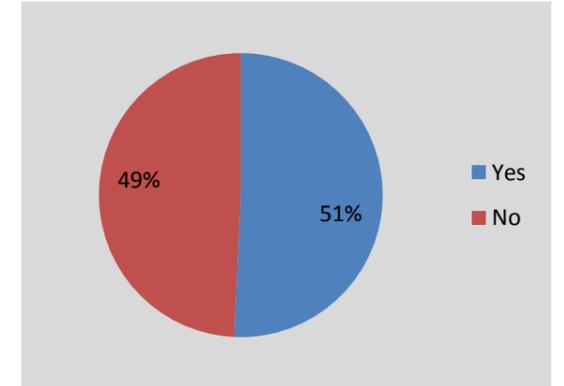
IP commercialisation

As you can see that 55% answered YES and 45% answered NO.
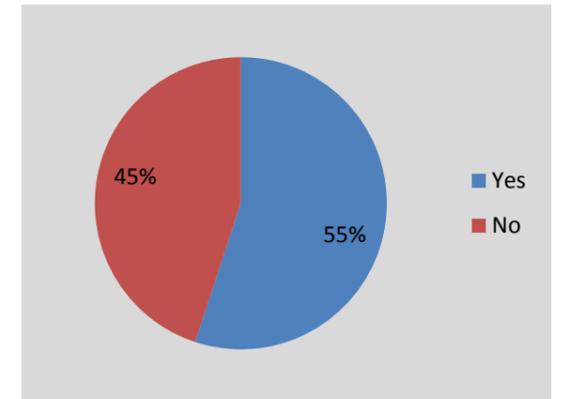
IP evaluation: How to assess your institution's potentials and create a strong IP portfolio

As you can see that 40% answered YES and 60% answered NO.
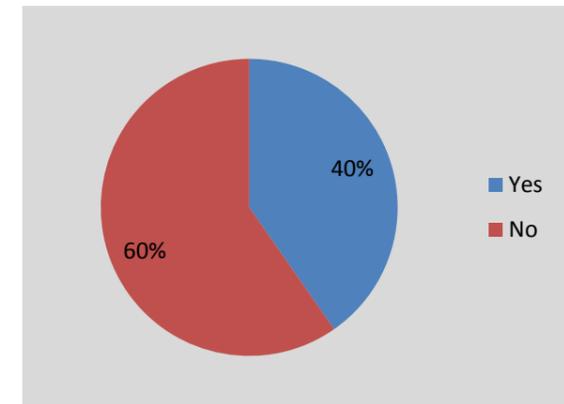
Knowledge and Technology transfer:
Clever technology transfer – how to choose the most appropriate projects & how to manage them

As you can see that 59% answered YES and 41% answered NO.
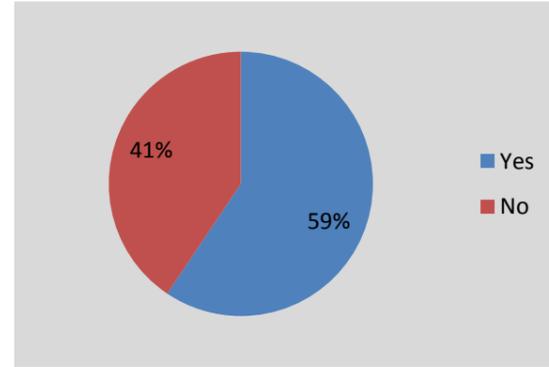
Do you employ university graduates in the area of energy engineering who were trained in a national/regional university in the Caribbean?

As you can see that 49% answered YES and 51% answered NO.
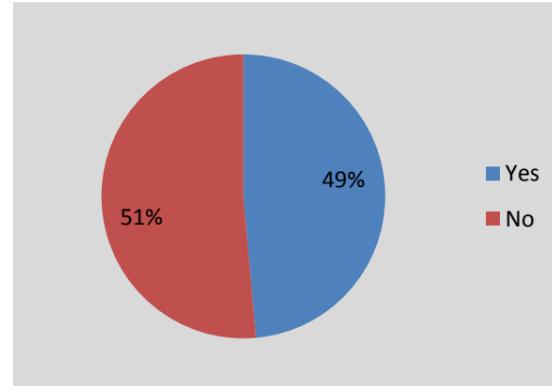
If yes, are you satisfied with their level of knowledge and skills?

As you can see that 37% answered YES, 45% answered NO and 18% not answered.
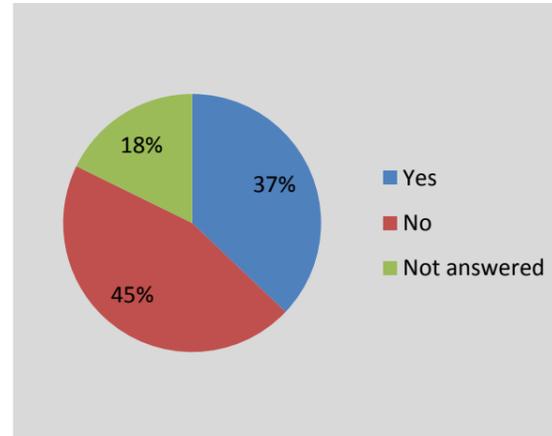
Please indicate in which of the following ways your company has worked with Higher Education Institutions (HEIs) related with the Energy and IP sectors

R&D cooperation

As you can see that 54% answered Never, 15% Once, 28% A few times and 3% regularly .
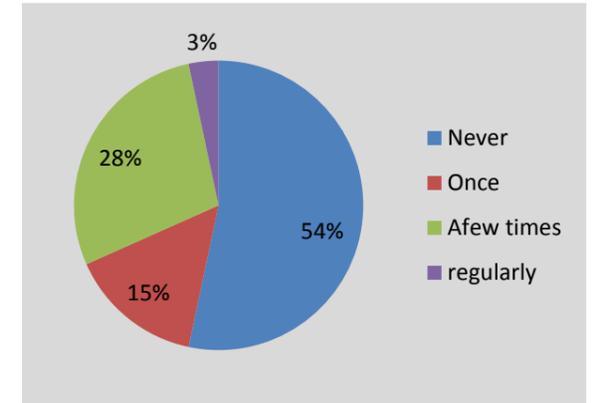

Project, thesis work with students

As you can see that 42% answered Never, 13% Once, 30% A few times and 15% regularly .
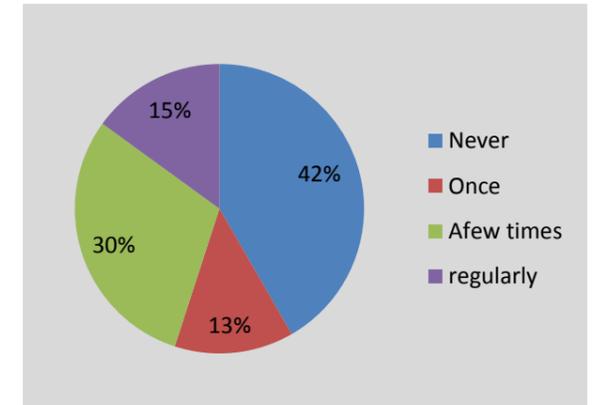
Consulting by HEIs for my company

As you can see that 47% answered Never, 14% Once, 32% A few times and 7% regularly .
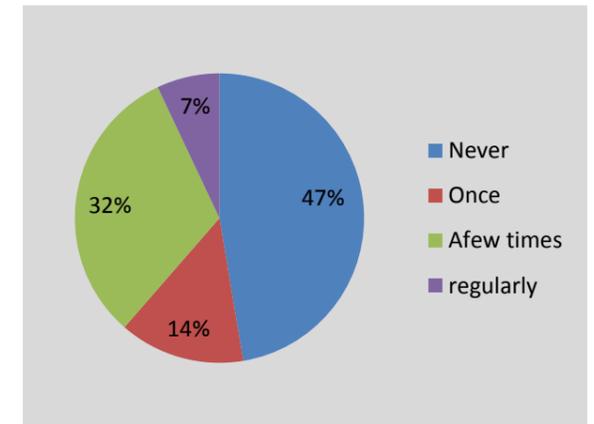
Consulting by my company for HEIs

As you can see that 44% answered Never, 15% Once, 36% A few times and 5% regularly .


- Never 44%
- Once 15%
- Afew times 36%
- regularly 5%
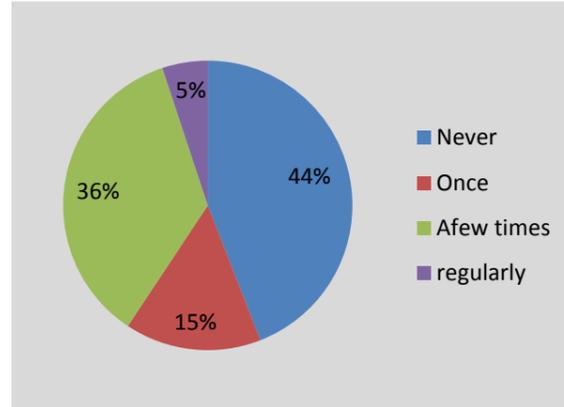
Training by the HEI

As you can see that 49% answered Never, 13% Once, 21% A few times and 17% regularly .


- Never 49%
- Once 13%
- Afew times 21%
- regularly 17%
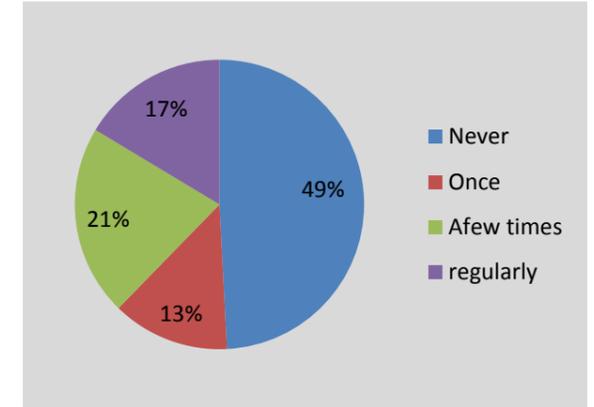
Knowledge transfer or exchange

As you can see that 46% answered Never, 19% Once, 20% A few times and 15% regularly .


- Never 46%
- Once 19%
- Afew times 20%
- regularly 15%
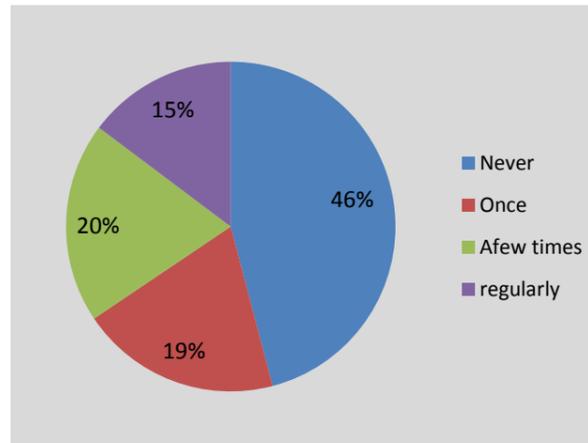
My company participating in teaching within the HEI

As you can see that 52% answered Never, 12% Once, 21% A few times and 15% regularly .

- Never 52%
- Once 12%
- Afew times 21%
- regularly 15%
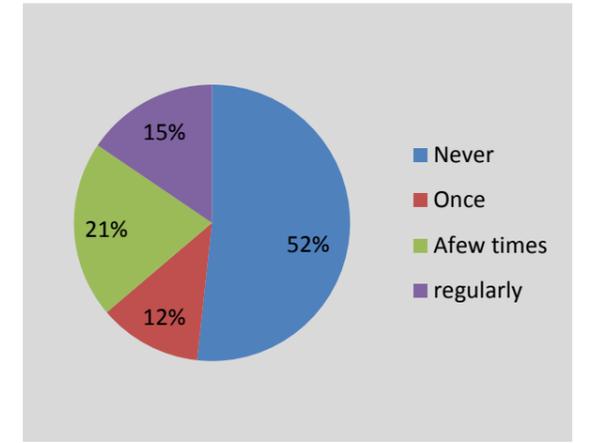
Organising events

As you can see that 50% answered Never, 16% Once, 17% A few times and 17% regularly .

- Never 50%
- Once 16%
- Afew times 17%
- regularly 17%
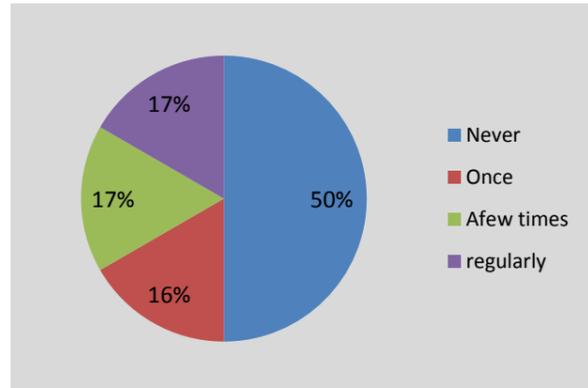
Participation on committees/ advisory boards /governance boards

As you can see that 52% answered Never, 15% Once, 21% A few times and 12% regularly .

- Never 52%
- Once 15%
- Afew times 21%
- regularly 12%