



ERASMUS+ PROJECT

Re@WBC

Enhancement of HE research potential
contributing to further growth of the WB region



Co-funded by the
Erasmus+ Programme
of the European Union



University of Sarajevo

Report on mapping the research human potential and issues

Sarajevo, October 2016

Project number: 561586-EPP-1-2015-1-RS-EPPKA2-CBHE-JP

"This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein"

Table of Contents

Introduction.....	2
Methodology	2
Information and data sources	3
Outline of the report	4
Research potential in the university	4
Gender balance.....	6
Employment and career development	6
Career development services	8
Overview of data from the researchers' survey	8
Ethics.....	10
Overview of data from the researchers' survey	12
Working conditions.....	13
Overview of data from the researchers' survey	14
Accountability and public responsibility	16
Public engagement	17
Overview of data from the researchers' survey	18
Training	19
Professional development.....	19
Mentoring and supervision	20
PhD training.....	20
Overview of data from the researchers' survey	21
Research projects and collaboration	23
Overview of data from the researchers' survey	25

Introduction

The research at the University of Sarajevo is characterized by a prevailing gap between the theory and practice. On one side there is an ample and comprehensive legal framework with pertaining strategic documents and a firm commitment to enter the European research area with highly set criteria which are in line with recommendations, directives and resolutions of the European Union and the Council of Europe. On the other side however there is an unfavorable financial and political framework within which the previously mentioned standards need to be implemented. This situation is mainly caused by a shortage of funds for financing fundamental and applied research as well as by the lack of political will for a strong support to the development of science and education. Despite the set framework and limited support due to budget restrictions the University of Sarajevo still offers significant research results to the public. At the University of Sarajevo the research is conducted within 30 organizational units (25 faculties and academies, 5 institutes) and 72 sub-organizational units (4 university centers, 30 faculty institutes, 23 laboratories and 15 centers).

The objective of this report is to synthesize the outputs from the process of mapping the research human potential and issues in the university, that included a desk research and a survey among researchers, with objective to serve as a background document for the development of the HR strategy of the university. Based on the good practices of EU universities - the active partners in this process, initial action plan for moving towards an implementation of all principles of the European Charter for researchers and Code of conduct for the recruitment of researchers, is also developed.

Methodology

This report has been developed in three phases.

First phase implemented a desk research, based on the "Questionnaire for mapping the research human potential and issues in WBC universities", which has been developed in scope of Re@WBC project. The questionnaire covers a range of topics relevant for HR management in research institutions, all of which are highlighted in the European Charter and Code, or The Human Resources Strategy for Researchers (HRS4R) process. The completed questionnaire is annexed to this report.

For the purpose of a desk research, a work group was established at the university. The work group was coordinated by Jasmina Gradaščević-Pleh, M.A. Other members of the work group were: Dr. Muhamet Avdipahić (rector, 2012 – 2016), Dr. Faruk Mekić (vice-rector for research, 2012 – 2016), Dr. Senada Kalabušić (project coordinator), Dr. Esmir Pilav (researcher), Zenan Šabanac, M.Sc. (PhD student).

The desk research involved a review of the different legal documents, reports, procedures and manuals and a data collection, which has been performed with collaboration of the various faculties, academies, departments and institutes. The first step was to review all available resources at the University level which were then completed with data from 30 organizational units which proved to be a challenging but eventually a successful process. Organizational units were very cooperative and helpful in the entire process of data collection. At the moment the University of Sarajevo does not hold a central database with data on research which is why we mostly rely on data provided by university members.

In the second phase, the outputs of the desk research were complemented with the data, collected by implementing a "Survey for mapping the research human potential and issues in WBC universities". The survey has been developed by the Re@WBC project and customized by the university. 285 researchers have participated in the survey, out of which 46.6% were PhD students. All scientific areas were represented among the respondents, with major participation of the researchers in medicine (23%), engineering and technology (19.1%), humanities (17.7%) and social sciences (17.7%). Most of the respondents (58.8%) were in age group 25-40, with additional 31.7% in age group 40-55. All scientific positions were represented in the responses, but majority of respondents were in junior positions, namely 30.2% teaching and research assistants and 27.4% of assistant professors. Only 21.1% of the respondents were aware of the European Charter & Code.

The third phase was focused at the development of the initial action plan for improving the current situation in HR management at the university. The action plan was developed as a result of a gap analysis that concerned the outputs of the desk research and researchers' survey data, as well as the collection of good practices acquired during the university staff study visits to EU universities.

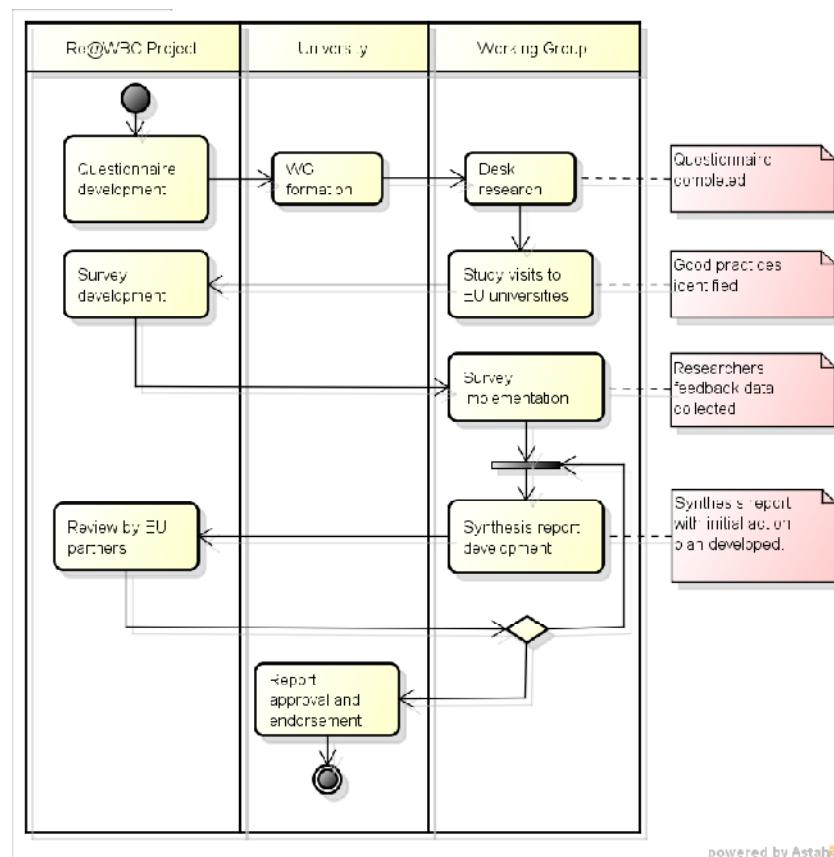


Figure 1. Workflow for developing this report

Information and data sources

The following documents were used in the development of this report:

- Statute of the University of Sarajevo

- Law on Higher Education, Sarajevo Canton
- Law on Scientific and Research Action, Sarajevo Canton
- Standards and Regulations for Higher Education, Sarajevo Canton
- Development Strategy of the University of Sarajevo, 2011 - 2015
- Bylaw on Managing Human Resources at the University of Sarajevo
- Bylaw on Managing Quality at the University of Sarajevo
- Bylaw on Recognition and Awards at the University of Sarajevo
- Code of Ethics, University of Sarajevo
- Rules on Studying (third cycle) of the University of Sarajevo
- UNSA Annual Reports, 2014 and 2015
- Self-evaluation report, University of Sarajevo 2013
- Budget of the University of Sarajevo
- Register on research projects

Outline of the report

The report covers the most relevant topics, covering the principles of the European Charter and Code, namely, employment and career development, ethics, working conditions, accountability and public responsibility, training and research projects and collaboration.

Research potential in the university

According to the Standards and Regulations in Higher Education (Sarajevo Canton), professors at the university are expected to spend 70% of their working time in teaching and participating in commissions and other working bodies, while 30% is allocated to their research activities. Assistants on the other hand are expected to spend 85% in teaching and 15% in research activities.

When considering the research human potential, University of Sarajevo is a moderately large university, with balanced distribution of researchers among scientific disciplines, with somewhat more researchers involved in medical and health sciences (23%), social sciences (20.4%) and engineering and technology (17%).

In 2016, the overall number of researchers with employment contract, working at the university was 2412. Figures below show the distribution of the number of researchers in scientific areas (OECD Frascati classification) and positions.

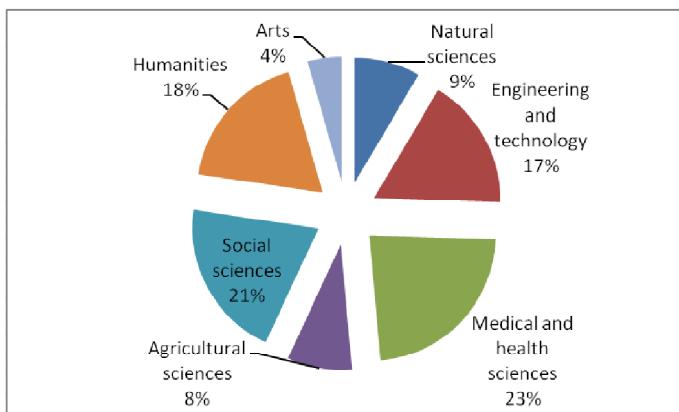


Figure 2. Distribution of number of researchers among scientific areas

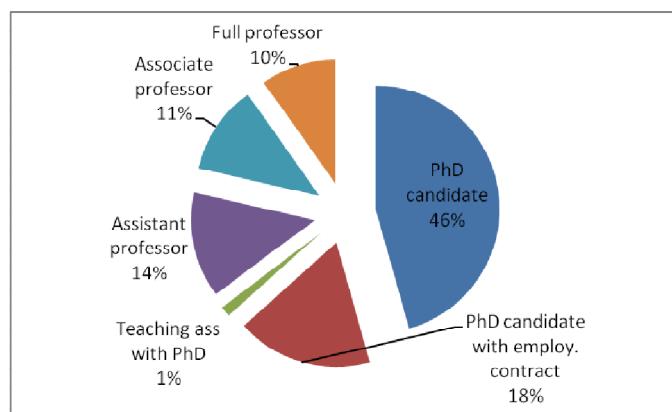


Figure 3. Distribution of number of researchers among positions

At the moment, there are 39 foreign researchers working at the University of Sarajevo, with full or permanent contract. Most of them (21) are PhD students with grants and there are 16 visiting professors.

Overall number of PhD students in the university is 342. Figure below illustrates the distribution of this number of students among scientific disciplines.

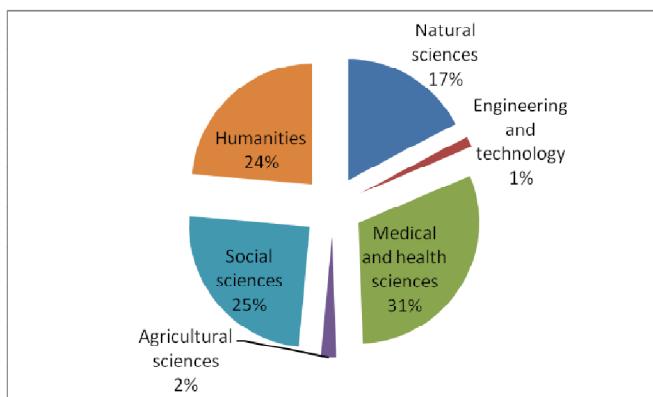


Figure 4. Distribution of number of PhD students among scientific areas

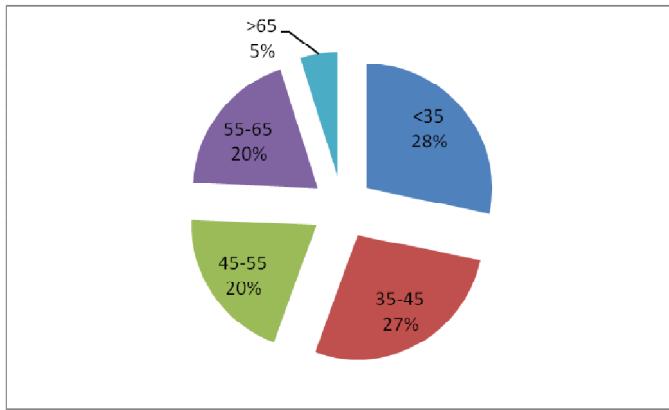


Figure 5. Age structure of the researchers employed in the university

In May 2015, the Government of the Sarajevo Canton (the founder of the university) passed a temporary moratorium on new employment in all public institutions and this moratorium remains in place until the end of 2016. The new staff can only be employed with a prior approval of the government and this action also applies to temporary contracts. This situation significantly affects HR potential at UNSA. Most of the departments are continuously expressing their concern with regard to lack of younger researchers, affected by the temporary moratorium.

Gender balance

The gender balance is fair, when number of researchers is considered (among teaching staff, there is 48% female and 52 male employees). However, when looking at top management positions, the situation is less balanced. Namely, there are 22 male and only 4 female deans.

In the researchers' survey, the respondents were asked to rate if the principles of gender equality were fully applied at all levels of operations and decision-making. The results show relatively positive perception and they are illustrated in a graph below:

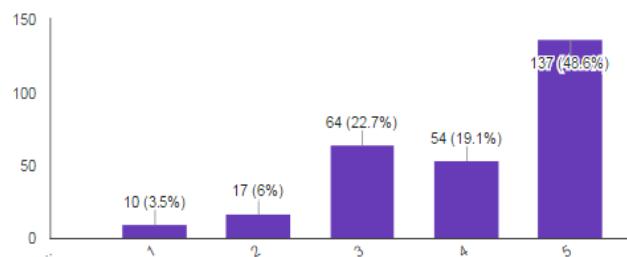


Figure 6. Perception of application of gender equality principles in the university among researchers

Employment and career development

In 2014, university recruited 232 researchers (9.6% of overall number of researchers), out of which 131 on senior positions (level of assistant professor and higher). 33 researchers were retired in the same period. Thus, overall growth of the human capacity in the given period was 8.25%. When considering the scientific disciplines, the growth (increase in the number of researchers in 2014) is large in all the

disciplines besides agricultural sciences where minor decrease was noted (-0.5%). However, it is noted as quite significant in the fields of Social sciences (14.2%), humanities (11.8%) and arts (9.4%).

All open positions are advertized on the web site of the University (www.unsa.ba), web sites of faculties/academies as well as in daily newspapers. Positions are advertized only in local language. Typical duration of the ad is 15 days.

Only full professor positions are with permanent contract. Maximum durations of the contracts for teaching assistants are 4 years, for assistant professors – 10 years and for associate professors – 12 years. However, in practice, the researchers typically take half of this time on the present positions, before advancing to more senior one.

In the Canton of Sarajevo according to the Law on Higher Education before advancing to senior position, or for employment into one, the researchers must meet the following criteria. Assistant professor needs to be a holder of a PhD, with 3 scientific papers published in acknowledged journals and teaching competencies. For associate professors, the conditions are as follows: at least one elective period as assistant professor, at least 5 scientific papers published in acknowledged journals, 1 book and original professional success such as project, patent or original method all post to the election to the position of the assistant professor and at least 1 mentorship (at MA level). Full professor need to have at least one elective period as associate professor, at least 2 books, at least 8 papers published in acknowledged journals all this post to the appointment to the position of an associate professor and 2 mentorships (1 MA, 1 PhD)

According to the Statute published scientific works will be considered relevant if published in national or international publications following international data bases defined in the register of national and international bibliographic data bases which is set by the Senate upon the proposal of the councils of scientific/artistic groups. At the moment the University of Sarajevo does not hold such register. Published scientific work which is not followed by international data bases will be considered relevant if reviewed by at least two reviewers which is proved by the candidate once he/she submits the application for the call to the academic advancement. Acknowledged journals are different for different scientific areas. Faculties/academies propose referent publications for their scientific field which are indexed in bases such as C.E.E.O.L., EconLit, EBSCO Host, Index Copernicus, Business Source Complete, DOAJ, PoroQuest, Cambridge Sociological Abstract, SPORTDiscus TM, SPONET, getCited, CABI, Scopus, CAB Abstract, Academic Journal Database, Elektronische Zeitschriftenbibliothek, (EP) USA, RILM, CABI-CAB, SocINDEX, Forestry Abstract, etc.

The decision on announcing the open position on the university is made by its members. The Council of Faculty/Academy defines the needs for employment of academic staff in accordance with the standards and regulations in higher education. These standards among others define the average number of students per teacher.

Positions' competitiveness depends on the scientific field/department for which they are open. For example, in engineering and technology, the average number of candidates is 1-2, with exception of architecture, where the number of candidates can reach as high as 20. Other typically very competitive positions are the ones open by the research institutes, but also Faculty of philosophy (up to 15 candidates).

According to the Statute of the University of Sarajevo the institutes can hire scientific staff in positions such as: scientific associate, senior scientific associate and scientific counselor. There are also research positions such as: expert associate, senior expert associate and expert counselor. Within the institutes there is a possibility to temporary employ researchers for the purpose of project implementation.

The candidates are chosen by the evaluation committees. The process of the selection of its members is launched by The Council of Faculty/Academy which nominates the committee for the preparation of the proposal for selection. The committee counts from three to five members holding the same academic position as advertized position or higher. Majority of committee members have to work in a specific scientific field as advertized position, while some of them can also be from a close scientific field.

After the consideration of the list of the candidates, the committee is obliged to submit a written proposal for the selection to the Council of Faculty/Academy within 30 days starting from the date set as deadline for submission of application by taking into account the fulfillment of all defined criteria for appointment to the relevant academic position. The final decision referring to the specific academic position at the Faculty/Academy level is made in accordance with the criteria prescribed by the Law, the Statute and general rules of the Faculty/Academy. During the decision-making process at the University level, one committee representative (raporteur) must be present at the session of the Senate at which the decision is considered (in case this person is not present the proposed selection will not be considered).

With regard to the report templates, they differ from one department to another. University members define their own procedures for evaluation.

University of Sarajevo does not implement/support the transferrable grants.

There is an increasing demand for the employment of new staff and researchers among all members of the university. Three key factors or inability to meet this demand are temporary moratorium for employment of new staff, lack of financial resources for opening new positions and insufficient research infrastructure.

Career development services

University of Sarajevo partially provides career development services to students and researchers.

Overview of data from the researchers' survey

Survey data shows that researchers are in general satisfied with the way employment and career development processes are implemented in the university. Majority thinks that evaluation criteria are transparent, but there is a somewhat weaker consensus on the fairness and satisfaction of the best interest of the organization in the above processes.

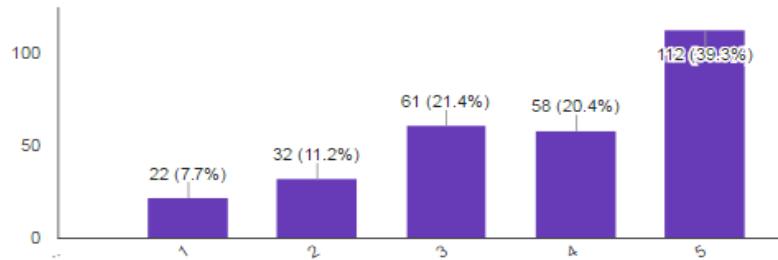


Figure 7. Perception of researchers of the transparency of the criteria for employment or career advancement

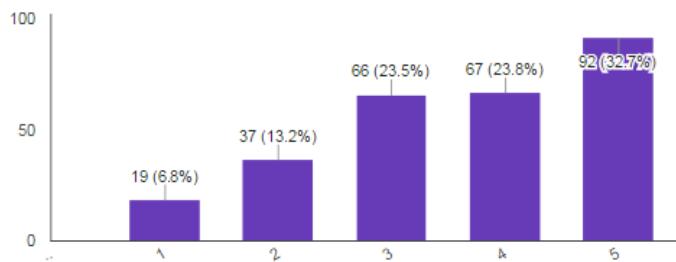


Figure 8. Perception of the fairness and satisfaction of the best interest of the employer in the processes of employment and career development

Published scientific publications (92.3%), and teaching experience (75.8%) are considered as the most important conditions for employment and career advance, followed by foreign language fluency (55.4%). Less important criteria are industry (13%) and entrepreneurship (8.4%) experiences.

The respondents were also asked to provide general comments regarding the employment and career development in the university. Below, the highlighted comments are listed¹:

- I am not fully aware of the procedure of an election. I know the criteria, but I don't know how the committee is using these criteria (or if there are other criteria) to make the final decision.
- There are no calls for employment of the non-teaching staff. I believe interviews as part of the employment process should be implemented. Also, additional effort is needed to make the evaluation of the past work and qualifications – correct.
- Introduce a practice of a simple employment of the best students, without any administrative burden.
- Employees are teachers, not researchers. We are expected to use our own spare time (what's left after a big time spent on teaching) to do the research work.
- Election into higher titles is regulated by the Law of higher education. This law is a main obstacle for changes and improvements of the procedures.
- Employment is not transparent at all, no scientific references are taken into account. Motivational interview is introduced as a way to favorize the candidates with desired political background.
- Calls are pure formality.

¹ Number of list items does not correspond to the number of received narrative comments. Some comments were merged, while the others were structured into several items.

- There is a clear lack of younger researchers, due to a lack of funds for their engagement.
- Scientific excellence is the only criteria in the process of employment.
- Additional criteria should be introduced: critical thinking, research spirit, team work and good interpersonal relationships.
- Teachers have too much freedom to employ whoever they want, according to their own criteria.
- There is no employment (at least part-time) of candidates from the industry or entrepreneurs and the need for such profile is huge.
- Criteria too low, the only thing important is who you know.
- Employment is transparent and fair.
- The possibility for employment of new personnel is extremely low and not only for financial reasons. Probability of getting a job without PhD is none, and even with PhD diploma, very low.
- Nepotism.
- Best students cannot pursue the research career, because of lack of criteria. Many of the employed assistants advance their careers even if they don't have references needed for the advancement.
- All acts, by-laws and procedures valid at the UNSA should be made uniform.
- We are not employing researchers, but teachers, because employees are overburdened in the teaching process and they cannot do the research.
- Employment is very transparent in past few years.
- Employment criteria is not standardized.
- In the case of re-election, a call should be internal because this way we get candidates with questionable competency. In these cases, employee of the university is not favorized at all.
- Multicriteria evaluation should combine the value of motivation and longer work expectancy (younger candidates) with expertise (older candidates).
- It's not researchers who are employed but teachers. Only if they can find some spare time, then they can do the research, which is wrong – teaching is too much of a burden.

Ethics

At the University of Sarajevo there is an Ethical Council, established at the University level as well as Ethical Boards at the level of faculties/academies and institutes.

Ethical Council is a counseling body and it consists of nine members: one representative of each scientific field/arts (there are six), one representative of the Center for Human Rights, one representative of Student Parliament and one representative of the Rector office. Members of the Ethical Council are nominated by the Senate upon rector's proposal for a four-year mandate. The Ethical Council selects the chair among its members in its constituting session.

Ethical Board of the faculty/academy/institute is nominated by the dean/director and with the approval of the scientific/art Council for the period of four years. Ethical Board consists of 5 members (in certain cases based on the Rules of University more numbers can be nominated but not more than seven). During the appointment it is also necessary to appoint vice-members. In cases when the behavior of students is considered the Board membership is extended with two additional members (representatives of students). The chair of the Board has to be a teacher and is nominated by the dean.

A faculty/academy can pass an additional rule book of the Ethical Board and set and define rules on work and procedures of the Board that are not foreseen by the Ethical Code.

Individual responsibility for the ethical conduct is also expressed during the process of appointment or reappointment to scientific, teaching and artistic positions within the application. At that time, candidates are expected to submit a written statement in which they state that their work and achievements represent primary results of their work and that the work does not include sources other than those referred to in their work.

Members of the Ethical Committee and ethical boards are not remunerated for their work.

According to the Code of Ethics, unaccepted behavior includes: discrimination (direct or indirect), harassment, prejudices, fabrication of results, falsification, plagiarism, etc.

In medical sciences, the Ethical Boards are established also for the purpose of ethical conduct of experimental researches. Their work is mostly related to experimental trials and approving projects for this kind of research (for example, Dental School considered 15 projects, including PhD and MA thesis, where no misconduct was found).

Academic title can be revoked in case it is proved that someone else's scientific work has been adopted as one's own or it has been falsely or based on falsification cited as one of criteria for appointment to an academic position. The decision on revocation is made by the Senate upon the proposal of the Council of Faculty/Academy (Statute, art. 168). The revoking of scientific title has never happened.

The cases, reviewed by the Ethical Committee and Ethical boards are considered as transparent. Opinions of Ethical Boards and of Ethical Council are public. Ethical Council/Ethical Board determine the way and the place of their opinions' systematic publication. For the purpose of data protection when going public personal data mentioned in opinions must be omitted and therefore opinions are published in a reduced form (source: art. 33, Code of Ethics).

In some cases, ethical boards cooperate tightly with other relevant bodies and working groups established at the university.

Within the project „Strengthening of Communication Capacities of Agency for Prevention of Corruption and Coordination of Fighting Corruption in Bosnia and Herzegovina“ a team of the Government of the Canton Sarajevo organized a number of trainings on fighting corruption for contact persons from institutions in the Canton. Within project activities all public institutions (incl. University of Sarajevo and its members which still hold its own legal status) were expected to nominate a working group which was to develop two strategic documents: Plan on fighting corruption and Plan on integrity. At the level of the University of Sarajevo working groups were nominated (University of Sarajevo, faculties and academies). Until the end of 2015 the plans were expected to be submitted to the Team of the Government of the Canton Sarajevo for consideration.

Faculties implement different practices and tools during the investigation of the possible conduct. Most of them are using PhD databases and there is also individual experience in School of economics and business with antiplagiarism software which was purchased from the School's own funds (Turnitin²).

There is no central database of PhD dissertations; faculties maintain their own collections.

There were no formal complaints regarding the work of Ethical Boards and Ethical Council.

Seniority culture impact to the research freedom is affected by the restriction related to the minimum position for mentoring PhD students. According to legal regulations an Assistant Professor (docent) cannot mentor PhD students. A mentor to PhD students can only be an associate or full professor. There exist no data on the uptake of younger researchers among project coordinators at the university.

Overview of data from the researchers' survey

In general, the respondents were not fully satisfied with the way the different ethical issues are being handled at the university. 46% of the researchers were familiar with the cases of the ethical principles breach. When asked if the cases of the ethical principles breach were resolved in a fair way, 16.8% of the respondents were negative and 12.3% positive. 70.9% of the respondents were not familiar with the outcomes of these cases.

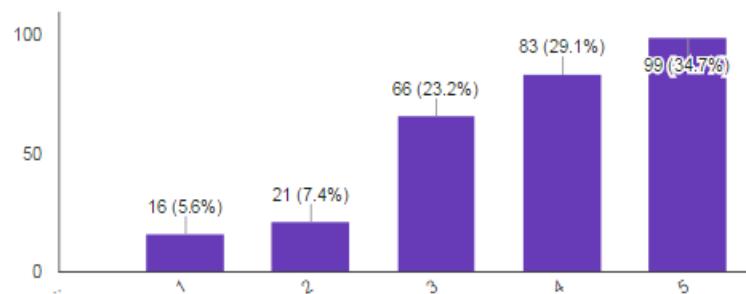


Figure 9. Perception of the satisfaction of the fundamental principles of professional ethics in research

Awareness of the researchers of the contractual and legal obligations arising from the employment contract and other signed acts and agreements is not full. The largest number of respondents rated it with mark 3. Similar conclusion can be made based on respondents data regarding the level of implementation of good practices related to the protection of research results, their confidentiality (before publication), as well as the protection of the personal data which is collected in the research process; and adequate presentation of the research work in general public.

The data related to the perception of the equal and active participation in the work of the decision-making bodies in the university are inconclusive, with equal distribution of all rates, indicating the need for further analysis/or possible problem.

The highlights of the narrative comments are provided below³:

² <http://turnitin.com/>

- Project participants are not familiar with the activities of the project leader related to using financial resources of the project
- All researchers are responsible, they all do and present their research in adequate way. We, younger researchers are familiar with the work of our colleagues, we help each other.
- Forced co-authorships, chiefs have to be signed on the papers. Chiefs are dominating in supposedly academic, equal rights environment, they put their hands on other people intellectual property. Some teams are using our results without prior consultation and agreed collaboration in research. Environment is not motivating, lack of understanding.
- Younger researchers have big problem, because professors are preventing their scientific advance. Professors ask them to have quality doctoral works (they are engaged in long research, just to keep them behind), for which they are not given financial, not scientific basis. Assistants are busy writing master, magistar and PhD works for the others (children of professors' friends) and they do not have time nor funds for their own.
- Rights and responsibilities of the researchers should be precisely defined. There should be a system of control and system of awards for the successful researchers.
- Employees with high expertises are not considered as competent professionals and researchers by the experts of different profiles.
- It is very hard to get a project, independently of the level of application (regional or federation) and that is very important to professional development of a researcher and publishing results in different journals.

Working conditions

Major issues related to working conditions at the University of Sarajevo are: lack of fair balance between teaching and research, lack of research (and teaching) infrastructure and other tools (including relevant databases), all directly or indirectly affected by the lack of funds for research.

EURAXESS Service center is established at the University, within the project entitled "Development of Network Mobility Centers in Bosnia and Herzegovina (BAMONET)". One person from the Office for Scientific-Research/Artistic-Research Activities of the University of Sarajevo is appointed to coordinate activities of the ESC. ESC activities provide a comprehensive assistance to researchers and their families during their period of mobility in all matters related to their professional and daily lives helping them to reach the adequate services for their needs. The ESC submits statistics to European Commission.

According to Standards and Regulations for Higher Education, employees at the University are obliged to use 70% of their work hours on teaching and related activities (participation in committees, mentoring, participation in the different work groups, etc.); and 30% on research. PhD students (those employed as assistants or senior assistants) are in very unfavorable position, given that the standards applied to them prescribe as high as 85% of teaching hours and only 15% of research. Such a lack of balance could significantly negatively affect the quality of their research, as well as personal professional development.

³ Number of list items does not correspond to the number of received narrative comments. Some comments were merged, while the others were structured into several items.

At the university level the development of research infrastructure is not satisfactory and needs to be improved. However, the limited finances do not provide essential support for development of this area. The most university members lack equipment and adequate premises for their work in research. Some university members have managed to improve their infrastructure and some of them have agreements with industries.

Most of the faculties continuously express their concern on the lack of access to scientific databases and online libraries.

Researchers are allowed to pursue the external, temporary research opportunity by using paid (sabbatical) or unpaid leave (Source: Statute, art. 179 and art. 180). A paid leave can be approved for the duration of up to two semesters (a year) in the cases of: work on MA or PhD thesis; scientific, artistic and professional development (congresses, symposiums, etc.); moving to another HE institutions abroad for the purpose of one's development or within academic exchange; for the purpose of working on issues that are of special interest for the university/faculty. A paid leave can only be approved if there are planned financial means or in case there's a replacement needed to ensure a continuous teaching and other obligations.

An unpaid leave from work can be approved upon an employee's request, under the condition that such absence does not interfere with the regular work. This can happen in following cases: When an employee is engaged in work abroad based on his/her own wish concerning international scientific-technical, cultural, educational and other cooperation; Participation in social, cultural, sport and other events in country or abroad; Participation in work of international organizations, etc.

University implements very developed award system for extraordinary achievements in science and research, managed by the Board for Awards. So far, researchers have been awarded with honorary doctorates, university ambassador titles, medals, charters, awards for peace and progress, letter of thanks, etc.

Overview of data from the researchers' survey

In the researchers' survey, respondents were asked for the opinion on the adequacy of the research infrastructure, quality of the different services provided by the faculty (legal, HR, accounting, student affairs and EURAXESS SC), teaching-research balance and salaries.

Respondents were almost fully satisfied with the services provided by the legal department, while they were not aware of the HR services provided at the faculties. They were fully satisfied with the service provided by the department for student affairs and accounting department. Respondents were not aware of the fact that EURAXESS SC center exists in the university.

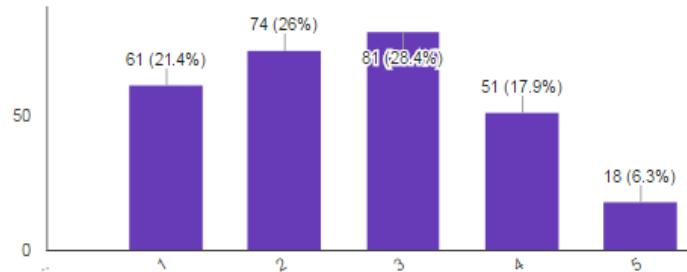


Figure 10. Perception of the adequacy of the institutional research infrastructure, by the respondents

Majority of respondents believe that researchers are generally overburdened with the teaching engagement. Respondents were asked to state their average number of teaching hours per week. 34.7% teach 5-10 hours. However, additional 25.3% teach 10-15 hours and 15.1% even more than 15. This is considered as worrisome since such high engagement can significantly affect the availability of respondents to perform research activities, pursue professional skills development opportunities, etc.

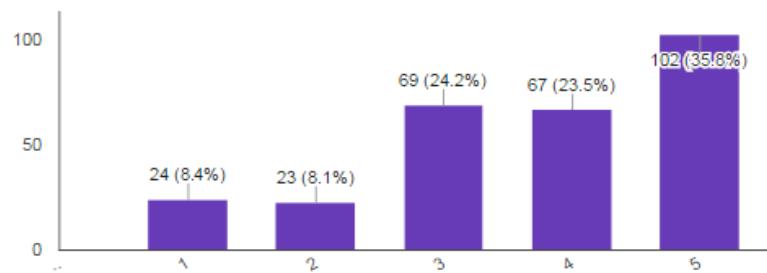


Figure 11. Perception of the overburden of the respondents with the teaching engagement

Majority of respondents show dissatisfaction with their salaries.



Figure 12. Level of satisfaction of the respondents with the salaries

Finally respondents were asked to provide narrative comments related to working conditions and social security. Some of the highlighted feedbacks are provided below⁴:

- Low salaries, lots of administrative burden, lots of teaching

⁴ Number of list items does not correspond to the number of received narrative comments. Some comments were merged, while the others were structured into several items.

- Social security is such that no one is afraid for his/her job. That decreases the interest and motivation, productivity. It makes the guarantee that non competent poltrons will remain their positions at the university.
- Conditions for research and teaching are far below the level which is expected at the modern age. Research work is directly related to researchers' efforts and directly dependent on their will. Without individual efforts, there would be no results. One can say that there is lab or software infrastructure for research and teaching, in place.
- Bad conditions. We are using our own relationships to implement research and we fund it from our own money.
- There is lack of approximately 60% of teachers and assistants in educational process. Engagement of experts from industry and abroad is needed.
- Teaching staff is over burdened with teaching while the number of hours allocated to research is very small. Conditions of work are very difficult due to a missing research facilities and lack of assistants and younger researchers.
- Access to scientific databases is missing.
- Working conditions are very good, we all have our own space, eventually shared with another colleague, computer and office facilities. Some computers are old and should be replaced. As for social security, legal department takes care about our rights and responsibilities and they inform us regularly on those.
- University is too focused on teaching, there are no funds for research.
- I am working on my own computer in the office, I buy my own office supplies.
- Salaries are too low, UNSA has non stimulating relationship with its own researchers
- Over burdened with teaching, lack of funding research work, even it is mandatory to have research results as condition for career advance
- Level of salaries does not correspond to today's living conditions. There is a lack of personnel at faculties, so the researchers are over burdened. Some professors are teaching courses on different faculties and by doing so they break the constraints on the maximum number of classes per week. They are doing that to get more income. However, these classes are taught in a superficial way. Often, most of their work is being done by underpaid assistants.
- It is necessary to implement uniformity and systematization for the whole university.
- Sometimes, there is a lack of basic office supplies. Researcher must pay for the traveling to scientific conferences and literature from his/her own pocket. Funding of the federal ministry are not sufficient support.
- Burden of teaching is huge. For that reason, some colleagues are in situation which can be described as mobbing by system: with so much classes, some assistants cannot work on their research, which is mandatory for advance.
- Collaboration with industry is very low. It can be used to define research projects. Besides the lack of time (due to teaching), there is a lack of other conditions for research work.

Accountability and public responsibility

The level of awareness of researchers in the university on the ethical issues and standards in research, related to data protection, privacy, confidentiality, plagiarism and others is considered as satisfactory, on the scale: very low-low-satisfactory-good-very good.

The level of awareness of researchers in the university on the contractual and legal obligations arising from work contracts, laws and by-laws is considered as satisfactory, on the scale: very low-low-satisfactory-good-very good.

Reporting process is implemented at the level of the comprehensive database of employed and hired staff at the University of Sarajevo, which also includes data related to working and legal issues of employees. Through this database organizational units (faculties, academies, institutes and centers) are obliged to submit data on their staff such as:

- personal data in accordance with the Law on Protection of Personal Data,
- type of employment,
- working experience,
- education,
- professional development,
- personal skills and competencies,
- academic advancement,
- published scientific and professional works, books, projects, patents and original methods,
- publicly presented works of artistic creation,
- acknowledgements for successful work in certain scientific fields

All relevant data must be updated in the HR database within 15 days, from the moment of the outcome delivery. An access to this database is reserved for authorized representatives of organizational units (only authorized representatives of the Rector office have an insight into overall data at University level).

This data is used for a more successful organization and realization of strategic goals of the University and its organizational units. (source: Rulebook on Management of HR at UNSA).

Public engagement

Typical activities in which scientific results are presented to the wider communities are: Participation and presentation of results in conferences, congresses, symposiums, round tables; Presentation through media (press conferences); Publication of results in scientific journals, national and international; Scientific meetings in the country and abroad; Scientific data bases; Web sites of faculties/academies + web site of university; Organization of seminars, digitalization of folk music, ICTM; Interviews and presentations through media (radio, TV, internet portals, news); International collaboration in mentorships; Organization of lectures for engineers working in industry; and Promotion of research reports.

Some departments have more important and active role in public than the others. For example, besides education and scientific role, the Faculty of Philosophy is considered as cultural public institution. Thus, all its ongoing processes significantly influence the society. Furthermore, Institute of History is present in public life in the country through organized talks on important historical issues having their contemporary significance and the associates of the Institute are also guests on TV and in daily and weekly newspapers. Faculty of Pedagogy closely monitors current issues related to pre-school and primary school education as well as to higher education. Employees (researchers) participate in public discussions upon the invitations from media.

There is PR department at the university, with one expert associate employed. His/her work include but is not restricted to content management of University news page, cooperation with media, arranging interviews with senior University officials, providing link between media and appropriate unit for data collection.

University continuously uses social media to promote the activities of public interest.

Overview of data from the researchers' survey

Survey data shows that the awareness of the researchers about the contractual and legal obligations arising from the employment contract and other signed acts and agreements, is not full. Similar overall response was get when researchers were asked to provide a rate of their satisfaction with institutional implementation of good practices related to the protection of research results, their confidentiality (before publication), as well as the protection of the personal data which is collected in the research process.

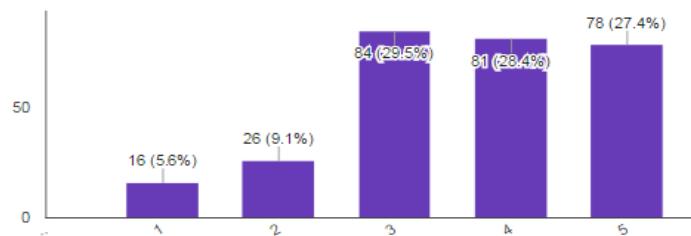


Figure 13. Awareness of the respondents about the contractual and legal obligations arising from the employment contract and other signed acts and agreements

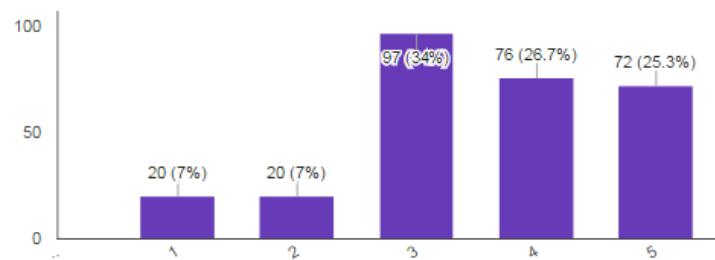


Figure 14. Perception on the institutional level of implementation of good practices related to the protection of research results, their confidentiality (before publication), as well as the protection of the personal data which is collected in the research process

Respondents were not satisfied with the implementation of the reporting system (regarding research activities) in the university and methodology for evaluation of the individual researchers' works.

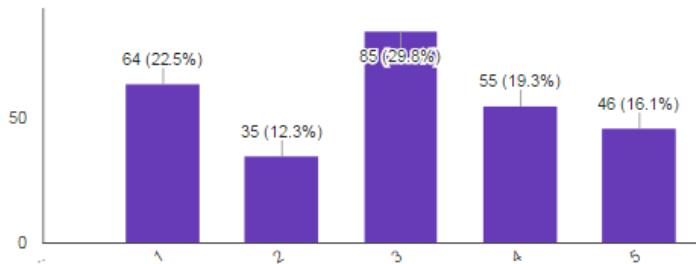


Figure 15. Satisfaction of the respondents with a reporting and assessment/evaluation system on the research of individual researchers

Also, the level of public responsibility of researchers regarding the dissemination of the scientific results in the broader communities is moderate, according to the respondents' perception.

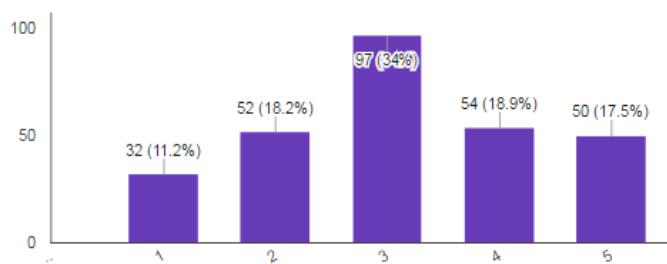


Figure 16. The perception of the respondents of the adequate presentation of the scientific results in the general public

Training

Professional development

Since September 2013, the University of Sarajevo has been organizing a program TRAIN – Training and Research for Academic Newcomers for academic staff (assistant, senior assistant and assistant professors) which includes 8 modules aiming at the improvement of skills and competencies in fields such as teaching, research and communication (e.g. Methodology in Research, Communication Skills, Entrepreneurial Skills, Networking and Teamwork, Project Management etc). Among participants there are also PhD candidates. 75 participants on average pass this program per year.

Some university members also implement their own policies on transversal skills learning. In social sciences, a needs assessment has been made. Based on that, different trainings are organized for young researchers, in specific, research methodology, project management, new teaching methods and others. In medical sciences, examples of case studies which foster the development of horizontal skills are included in curriculum. Following skills are addressed: critical thinking, problem identification and development of new ideas. The methodology of a scientific work and paper writing is compulsory subject for PhD students. In Engineering and technology, curriculum includes some topics that are important for PhD students, like presentation, analysis, synthesis, presentation of the problem and research results. In arts, an integrated part of the curriculum are following trainings: development of creative skills (performance of music works, critical thinking in musical sciences, new theories in music

and application in one's own work, lifelong learning and management in music, writing about music and development of verbal competencies, methods of presentation of one's own knowledge. Faculty of Pedagogy implements courses in research methodology, academic writing, management of human potential in education, and others.

In some cases, trainings in professional skills are organized by the external lecturers or through elective subjects.

Mentoring and supervision

A researcher at the university can work as a mentor to PhD candidate under the condition that he/she holds the position of an associate or full professor. Members of the PhD Evaluation Committee (usually 3-5 members) must hold the position of assistant professor at minimum. More than a half of members have to be from the scientific field of the PhD.

According to the Law on Higher Education (Canton Sarajevo) in order to advance to the position of an associate professor the candidate (assistant professor) has to be the mentor for at least one candidate for the second cycle of studies (master).

After admission to the university, PhD student follows the following process:

- Council of Faculty/Academy appoints a Committee for evaluating the eligibility and scientific merit of the topic
- PhD candidate presents and defends PhD proposal
- After the successful defense, the candidate submits a form to register his PhD (this phase is called eligibility of the topic and conditions)
- Committee for evaluating the research work (thesis) and mentor are appointed
- Committee submits a report which is verified by the Senate
- Candidate writes his/her PhD draft which he/she then submits
- Committee for PhD defense is appointed (mentor is known) and writes reports which are approved at different levels (faculty, councils of scientific field at university level, Senate)
- After the PhD defense, Committee writes a final report which is adopted by the Senate

During the work on PhD thesis, the candidate submits regularly reports on his/her work, according to the dynamics, defined by the mentor and the candidate.

In case a PhD candidate assesses that he/she cannot complete his/her task or a mentor (due to justified reasons) cannot supervise PhD, one can ask for a change of assigned mentor. This is regulated at the university member (faculty) level and needs to be justified in detail.

Both mentors and Evaluation committee members are remunerated for their work, based on the principles of the rule books on allocations of funds coming from the third study cycle. Each of the university members has its own rule book.

PhD training

Typical engagement of PhD students at the university include:

- teaching and research projects

- participation in symposiums, conferences, round tables in country or abroad
- writing journal articles
- visits to other research organizations, industries which are interested in scientific results
- engagement in research labs and clinical teaching
- summer schools, schools for training and field work
- depending on their scientific/research field, PhD students may have access to different forms of education (incl. Seminars, workshops, conferences, round tables, academic mobility)

At the Faculty of Health Sciences, PhD students are expected to take part in activities in each semester and accumulate ECTS credits; they are also expected to publish one paper from their specific field or two papers from a more general field as first authors; at the annual level they must take part in two conferences or in other kinds of professional development.

Each faculty/academy defines its own standards for the engagement of PhD students (it's them who proposes the curricula for the third cycle of studies to the Senate defining the ECTS distribution). According to the Regulations of the Third Cycle of Studies the curriculum for the third cycle includes:

- study areas, subareas and disciplines
- mandatory subjects,
- elective subjects
- research, in-field and practical work.

There is no systemic solution to funding attendance at conferences or professional development. In most cases, PhD students cover all travel, participation and similar costs. Costs of some activities are covered from ongoing national or international projects' budgets. The Cantonal Ministry of Education partially covers the costs for printing of PhD dissertation.

Level of internationalization of the PhD training is high, when comparing with the universities in the region. There are two accredited PhD courses in English, in natural and social sciences, and additional MA programs in medical and health sciences (integrated BA/MA), social sciences and humanities. In addition, according to the study catalogue (2015), there exists 84 study programs (MA, PhD), offering some activities in English. University offers joint PhD programs in natural (in collaboration with Universities from Austria, Slovenia, Bulgaria, Albania, Serbia, Macedonia, Montenegro) and social (with University of Vienna, University of Ljubljana) sciences.

Overview of data from the researchers' survey

The researchers' survey addressed the quality of PhD training, namely the activities of mentorship and supervision; and development of professional skills in the university.

The survey data shows that the large number of respondents perceives the work on mentorship and supervision as superficial and not effectively evaluated. The most often highlighted reasons for that were and lack of availability (overburden) of mentors/supervisors (48.4%), lack of interest/motivation of the mentors/supervisors (41.8%) and lack of evaluation procedures (41.4% of respondents).

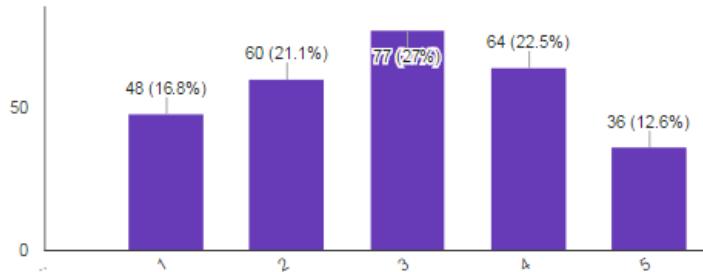


Figure 17. Perception of the misconduct in the activities of mentorship and supervision (superficial manner and lack of effective evaluation)

Respondents were not convinced that researchers in the university are interested in pursuing professional development opportunities. Some factors that could negatively affect the individual professional development efforts are lack of trainings/courses offers and lack of general institutional plan for individual professional development (49.5%), lack of availability (overburden) of researchers (49.1% of respondents) and the fact that the level of professional skills is not taken into account in career development (41.4%).

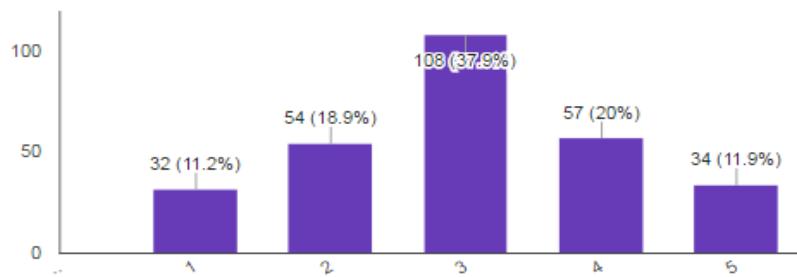


Figure 18. Perception of low interest of researchers to pursue continuing professional development opportunities

Some narrative comments regarding training and professional development of researchers are highlighted here⁵:

- Sometimes, some careers are advanced without met conditions on the publications, but with promises that they will be published.
- Researchers are struggling to offer quality courses, to do research and publish the papers in indexed journal, to present the work on international conference. All this is expensive, there are no funds, salaries are at the level of low wage workers. Some personnel react to this situation by ignoring everything – research is not being done, classes are held superficially. Others are trying to maintain the perception of the quality.
- Continuous development is limited, actually impossible because of the lack of funds.
- Researchers are over burdened with different activities, they are not remunerated for that, they are limited with procedures. Organization do not provide any stimulus for professional development, nor grants.

⁵ Number of list items does not correspond to the number of received narrative comments. Some comments were merged, while the others were structured into several items.

- Professional development is not needed, because it is not being taken into account in career advance. There is no real research because many researchers are working on private projects, for their own companies.
- Engagement of teachers in teaching process is not balanced. There is a lack of assistants. Impossibility of mentorship in II and III level.
- All researchers are continuously working on their own and their organization's development.
- Professional development is funded by researchers themselves and researchers do not have time and motivation to invest in that.
- There is a need for standardization and for developing procedures which will secure the career advances.
- Quality of the mentorship depends on the individual. PhD candidates are on their own. There is an interest for professional development but it has to be supported financially and organizations have to have a strategy for that.
- University lacks quality and rich library.
- Quality and quantity of the research is constrained by available funding.
- One of the main obstacles for professional development is lack of national funding for research. Current level of funding is not sufficient for serious research, procedures for project proposal are not transparent. Cooperation on international level is difficult because of a lack of readiness of especially young researchers to participate in research projects.
- No strategies for targeted development of researchers and research units.
- Although there are some commonalities, situation is different at different faculties. Some faculties have more budget. Faculties with lower budget cannot afford to remunerate mentorship and supervision, thus they are implemented in a good faith. There has to be one budget, at the level of university.
- Library is very weak, there is no access to databases and indexed journals. Lack of stimulus and demand from society and industry diminishes the potential impact of the research
- Pressure and stress related to existential issues is a serious risk to health of personnel, especially younger female researchers. Technocratic requirements and rules are not ethical.
- I believe that recently the scientific contribution is increased but still not sufficient to be competitive. We need more interdisciplinary research. I suggest collaboration of medical, mechanical and science faculties in direction of Biomechanics.
- Some professors are working on more than one faculty and that should not be allowed because it does not contribute to the quality. Conditions of career advance should be changed. There are some good scientists which are bad educators and vice versa. Best scientists should have less engagement in teaching and they should have different criteria for advance (they should not be required to write teaching books).
- University should work on establishing agreements with industry for commercial projects.
- There should be more flexibility for longer absences

Research projects and collaboration

The research at the university level is funded mainly from the university's own funds and from grants received from the Federal Ministry of Education and Cantonal Ministry of Education (as a founder it is foreseen by the law to a certain percentage) and projects. In 2014, 20% of total revenues have been

reinvested in research activities. In 2015, university has received a grant of 163.248 EUR for financing and co-financing research projects. The grant was allocated to medical and health sciences (46%), natural sciences (29%), humanities (15%) and engineering and technology (10%). Another grant for financing/co-financing research projects that are of importance to the Federation of BiH of 275.714 EUR was awarded by the same ministry in 2015, for publication of journals, bibliographies, professional developments of employees at universities (MA, PhD), support to the work of libraries, organization of national and international events, support to research of national importance, support to authors, co-financing of research work, equipment supply that is necessary for research, etc.

The uptake of industry in formal research process is generally insufficient at university level and it differs from one university member to another. However, there are some examples of good practices. Most of the faculties put the efforts to compensate the lack of resources, especially in research infrastructure, with the collaboration channels with industry and other communities. Such collaborations provide great value also to education process, not only research. The School of Economics and Business has a Business Council with members who are directors and managers of leading companies in the country. This Council plays a significant role in the work of the School, proposition of attractive and actual research topics, access to relevant data, employment of students and scholarships, work on projects and case studies, experience exchange with business community. Faculty of Pharmacy has established collaboration with pharmaceutical industries for the purpose of project implementation and teaching as well as with public and private pharmacies. Faculties of Electrical Engineering, Health Sciences and Veterinary have signed agreements with a certain number of companies which provide possibilities to access their specific research infrastructure. In Faculty of Medicine, representatives of pharmaceutical industry are predominantly included in formal research through ordered studies. Representatives of industry can be included in committees in case they hold necessary academic titles.

Other faculties, such as Faculty of Agriculture and Faculty of Civil Engineering also have agreements with industries. Faculty of Criminalistics, Criminology and Security Studies have signed agreements on scientific and professional cooperation with agencies implementing the laws, institutes and faculties as well as NGOs from related and closely related field (e.g. prosecutor's office of BiH, border police BiH, SIPA, OSA and UNDP).

The University of Sarajevo is about to introduce an alumni association at the university level. So far some university members have established their own alumni associations or collaborate in other way with their alumni (e.g. networks) and diaspora. In most of the cases, these collaborations are based on the individual efforts. They aim at improving the formal education process (visiting professorships, participation in committees), but also have more informal impact to research (counseling, joint research proposals, staff mobility, organization of conferences and other events).

The School of Economics has its own Alumni association which is an important partner in its work. The Alumni association enables exchange of ideas, information and data with business community.

In medical sciences, the collaboration with scientific diaspora takes place through visiting professors and participation in committees' work. Faculty of Veterinary often holds scientific meetings, organized by the dean and vice-dean for research, post-graduate studies and continuous education. Faculty of Health Sciences has appointed a coordinator of its alumni association. The activities related to alumni

association development are also anticipated, by the quality assurance system. Faculty of Civil Engineering has its own alumni association. It also has contacts with the most prominent representatives of scientific diaspora who are engaged as professors at the second and third study cycle, but also if deemed necessary as mentors for PhD thesis. Institutes can employ scientific associates (equals to the position of assistant professor), senior scientific associates (equals to the position of associate professor) and scientific counselors (equals to the position of full professor) who can be mentors.

Academy of Music has its own alumni association with which the cooperation is established through concerts (there is an annual concert of MA), visiting of alumni who are currently working in institutions for music worldwide, organization of festivals with the help of alumni living abroad, publication of works of alumni in the journal of Musical Academy, etc. Institute of Languages offers trainings and participates in relevant projects related to languages for BiH diaspora. Target groups are organizations willing to cooperate (stakeholders are the Institute itself and relevant actors from BiH and abroad, such as ministries, faculties, institutes, organizations, etc.) Establishment of the Alumni association of Faculty of Pedagogy is ongoing. The cooperation is established through the organization of seminars and professional meetings from the area of preschool and primary school education. The office for teaching and the vice-dean for teaching and students' affairs are responsible for these activities.

There is a certain form of collaboration with the public administration and NGOs.

As already mentioned above there is a room to improve research collaboration. At the moment, this collaboration is rather based on individual contacts of researchers. The cooperation with relevant ministries regarding their support to research also needs to be enhanced and strengthened.

Unfortunately, success in research is based on individual contacts and endeavors which clearly show that there is an urgent need for a more systematic approach to issues concerning research collaboration with all relevant actors. It is also necessary to improve collaboration with international research institutions.

Overview of data from the researchers' survey

The survey have found that researchers are not fully satisfied with the way institution disseminate and share accurate and updated information about research funding opportunities.

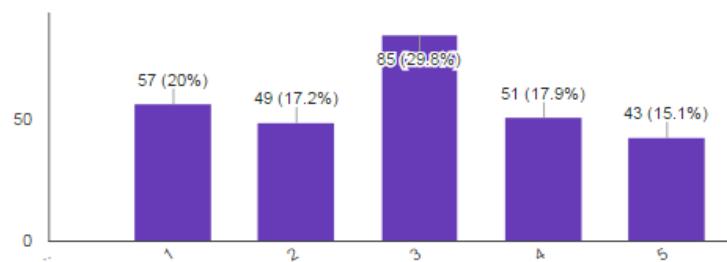


Figure 19. Perception of the respondents on the efforts by the institution to deliver accurate and updated information about the opportunities for research funding