FUTURE-ORIENTED INDIVIDUALS: LESSONS LEARNED FROM A COMPETENCE SURVEY

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PROJECT RATIONALE

"Becoming Future –ORriented Entrepreneurs in universities and companies (beFORE)" project **underlines the need to enrich university entrepreneurship education, company training and business practice** by bringing together academic, research and business partners capable to develop and educational offer to create Futures Literate Individuals with improved capacity for analysing and dealing with the unknown future challenges, particularly when managing organisations and developing innovations.

The **main output of the project** consists of and online Futures Literacy course that will provide target groups with the overall knowledge supported by practical examples of using the future studies in business, in teaching and in research. All in all, we aim to increase appetite for further futures knowledge and long term thinking practices among project target groups and to increase awareness of their impact on the future even in the face of uncertainty and change.

INTRODUCTION

The report presents the results of the online survey developed in **Germany, Italy, Poland** and **Spain** over six weeks (from November until mid-December 2017). The aim of the survey was to **identify educational needs of university students, teachers and researchers, and business representatives** in order to improve skills, knowledge, and abilities to deal with the uncertainties of the future. The starting point of this survey is shown in Figure 1, as target groups were asked to reflect and examine upon the twelve competences defined there:

Figure1. The list of competences and their definitions.

Answers were analyzed, applying a formula[1] to get weighted averages translated into competences rankings; from "1" - the maximum ranking scale (considered as the most important) to "6" - the minimum (considered as the least important).

Profile of respondents is detailed in Annex 1. To access the full questionnaire, click on here.

1. WHICH ARE THE COMPETENCES NEEDED NOW TO MANAGE FUTURE ORIENTED TASKS?

Obtained results reveal significant similarities and convergence of the assessments made by each target group regarding **competences evaluated as the most important and the ones that currently need improvement to manage future oriented tasks**. As seen in Figure 2, Critical Thinking, Adaptability/ Flexibility, Thinking Creatively, Analysing Data or Information and Developing Objectives and Strategies, together with Making decisions and solving problems seem to be the six highest ranked competences, getting similar results per target group.

Figure 2. Average rankings of competences concerning together "Importance" and "Need of improvement" dimensions.

ALL TARGET GROUPS	Academics	Students	Entrepreneurs
Critical thinking	Adaptability/ Flexibility	Critical thinking	Critical thinking
Adaptability/ Flexibility	Critical thinking	Adaptability/ Flexibility	Adaptability/ Flexibility
Thinking creatively	Analysing data or information	Making decisions and solving problems	Developing objectives and strategies
Analysing data or information	Thinking creatively	Thinking creatively	Thinking creatively
Developing objectives and strategies	Systems analysis	Analysing data or information	Analysing data or information
Making decisions and solving problems	Developing objectives and strategies	Developing objectives and strategies	Making decisions and solving problems

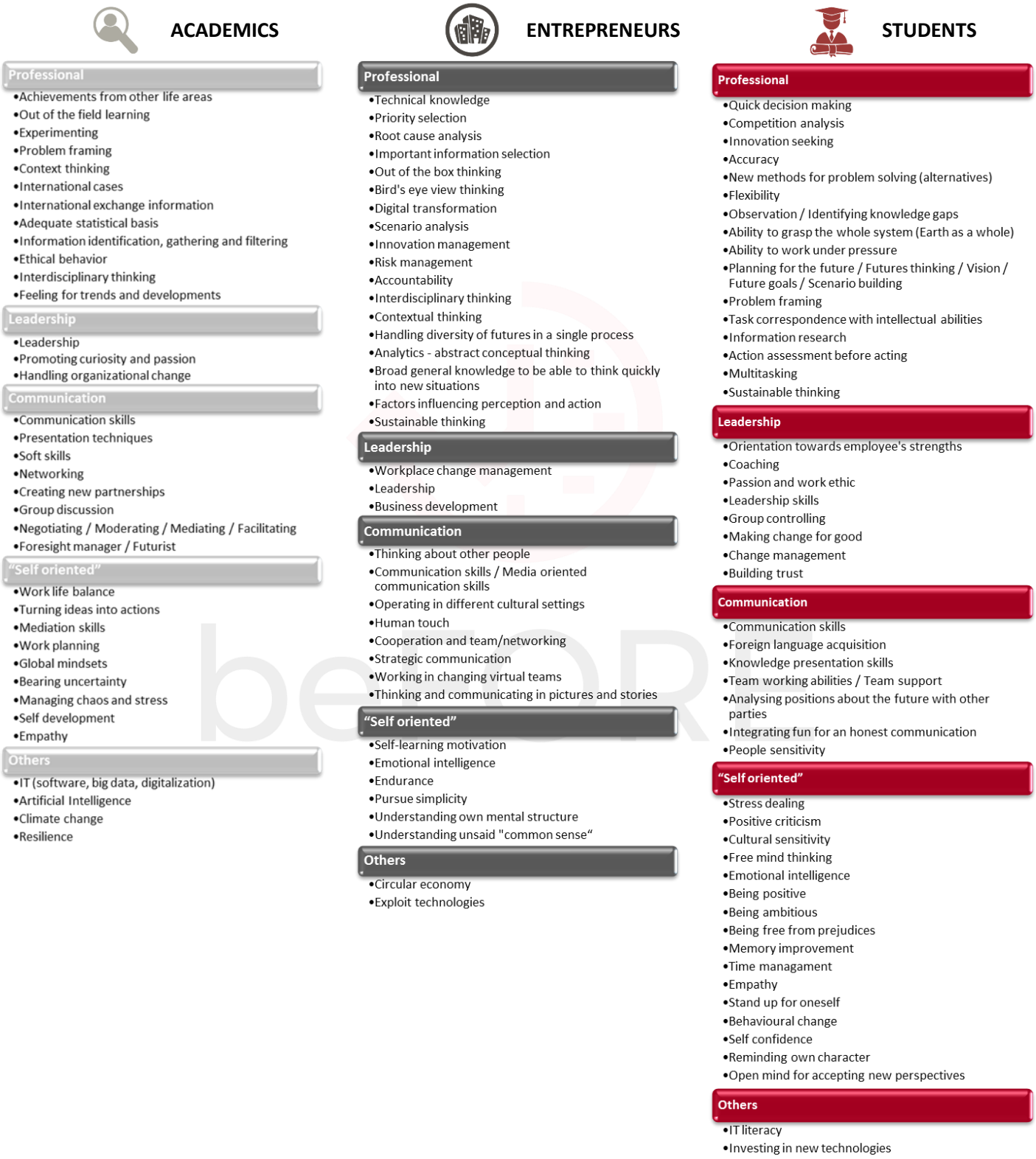
Note: The cell in white is the one not repeated in the top 6 of the rest of columns of this table.

On the other hand, **new competences were proposed by respondents**, which will serve as an additional source of data. Taking into account the diversity of the competences provided by respondents, the project team divided them into five broad categories, namely: professional competences (i.e. general issues and professional work tasks); communication and teamwork

[1] Formula: $I_{Ci} = \frac{n_1 \cdot 1 + n_2 \cdot 2 + n_3 \cdot 3 + n_4 \cdot 4 + n_5 \cdot 5 + n_6 \cdot 6}{n}$ where n_1 means how many times a competence was positioned at the first place (the same applies to n_1, n_2, n_3, n_4, n_5 and n_6) and n is the total number of respondents.

competences (i.e. working with people and building professional relationships); leadership competences (i.e. leading and influencing others); personal or "self-oriented" competences (i.e. personal predispositions, etc.) and other relevant competences that couldn't be included in the previous categories. The identified competences are visualized below in Figure 3:

Figure 3. Additional competences mentioned by each target group.



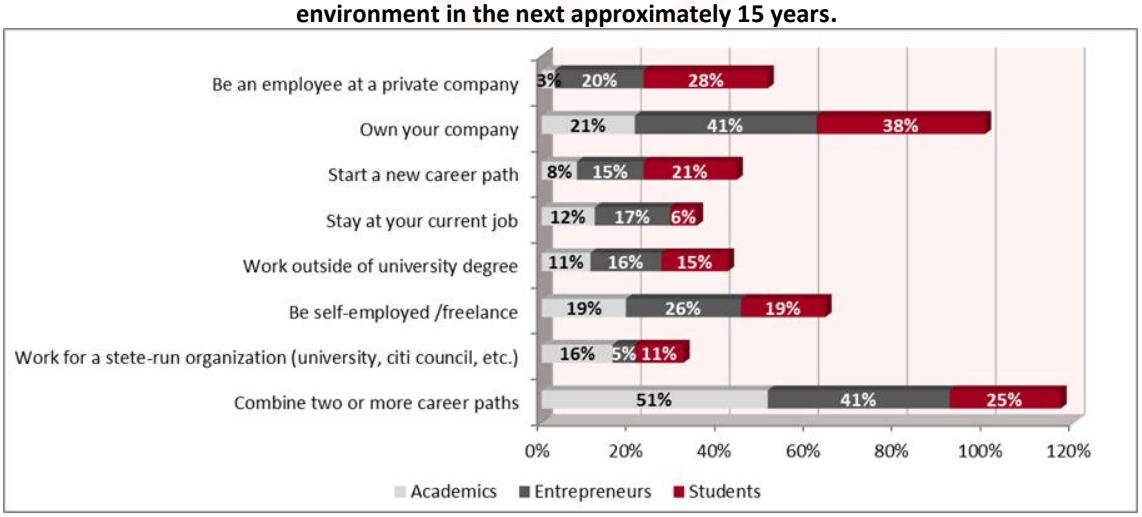
2. ANALYSIS OF EXPECTATIONS - JOURNEY TO THE FUTURE

This section includes the analysis of some future expectations or projections imagined by target groups about different ideas regarding future career choices, global and personal changes, job positions and future goals in the next 15 years. The purpose of the section was to set up a context that may help to better understand the competences that will be needed in the future by imagining future working environment.

2.1. Career choices imagined in 15 years' time.

In a multiple choice question respondents were asked to anticipate their future career paths. As showed in Figure 4, there are more significant differences among surveyed target groups regarding anticipated working environment. In the case of Academics, half of them expect to combine two or more career paths, while 21% (almost half less than Students or Entrepreneurs) selects "owning your company" as the option. On the one hand, Entrepreneurs prioritize owning their company and combining two or more career paths (with the 41% of respondents stating this, respectively); "owning your company" is similarly the most popular expectation for Students (38%), followed by the expectation of "being an employee at a private company" with the 28% of Students stating this. This last option is only selected by the 3% of Academics.

Figure 4. Career choices mentioned by each target group when imagining the future working environment in the next approximately 15 years.



2.2. Global and personal changes that will impact the future jobs – respondents view.

Respondents were asked to choose from a list of options, three main changes categories (global, personal and professional changes) that may have the greatest impact on their jobs in 15 years from now, and to provide specific examples.

Technological development or discoveries from scientific research, developments of markets, products, services or business models, together with personal life changes (i.e. migration,

starting a family) are considered as the most important by all target groups. It should not be surprising that personal life changes are mentioned by almost a 60% of respondents representing Students, in comparison to the approximately 30% of Academics and Entrepreneurs. In addition, changes related to developments of certain markets, products, services or business models seem to be important, especially for Entrepreneurs and Students. Changes related to economic, political or cultural implications, or radical structural or functional changes in the organization respondents may work for seem to be of the least interest for all target groups. Figure 5 presents main results regarding changes that will impact future jobs.

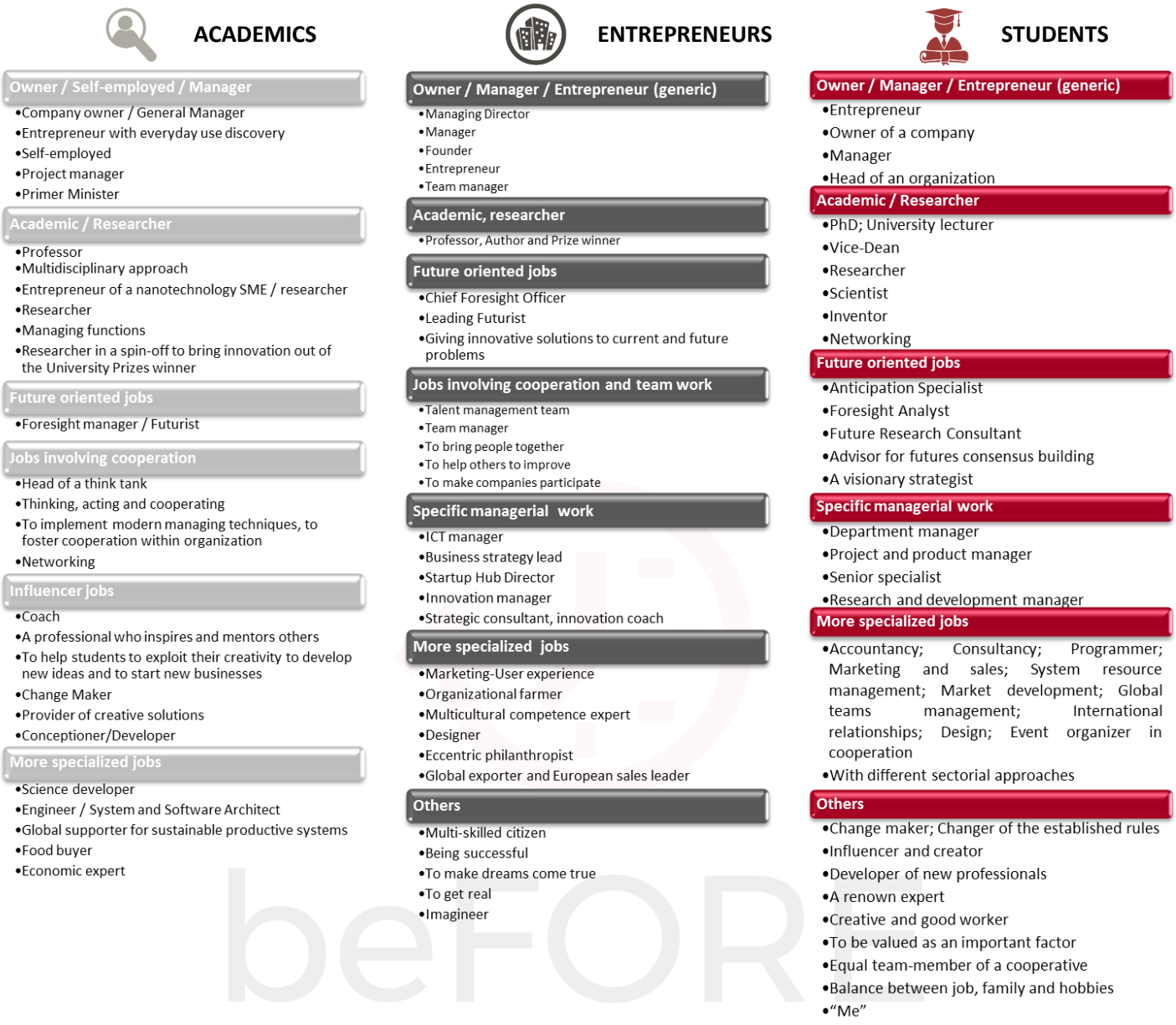
Figure 5. Global and personal changes that will impact the most the future job of each target group.

2.3. Job titles/positions imagined in 15 years' time.

This section discusses the responses associated with future jobs that the target groups imagine for themselves in 15 years' time.

Surveyed Academics named mostly traditional positions related to scientific career paths. Some other positions should be highlighted as well, as for instance, positions linked to self-employment, managerial approaches or jobs that involve working with others or influencing others. Entrepreneurs mainly identified positions related to starting and owning a business, along with jobs that involve managerial tasks. Jobs linked to cooperation and team work seem to be important too, as well as future oriented jobs in some cases. However, mentions about academic or research jobs are very limited. Finally, the analysis of Students' answers reflects a more diverse situation, combining similarly different type of positions, from entrepreneurial and managerial approaches, to more specialized technical, academic/research related and future oriented jobs (see Figure 6).

Figure 6. Job titles/positions imagined by each target group.



2.4. What kind of professional development goals do people want to achieve in their future job, in 15 years' time?

Becoming professionally successful in the organization or in the market seems to be the prioritized goal by all target groups, followed by the goal of initiating changes within the organization, country or globally and the goal of becoming a better employee or manager. Additionally, the following specific examples have been identified:

To become sucessful in your profession, organization or in the market – 49% of all respondents

51% Academics - "professional development", "researching, teaching and learning new things", "changing the rules", "making decisions in a different way".	**51% Students** - "economic conditions", "leadership", "achieving objectives and personal accomplishments", "organizational changes", "being innovative and creative".
47% Entrepreneurs - "producing an impact (i.e. social, breakthroughs, changing rules)", "creating a business / a product", "time management", "self-learning", "supporting and guiding others and cooperation", "foresight".	

To initiate changes in your organization, your country, or globally – 34% of all respondents

32% Academics - "changes that produce an impact on society", "applying sustainability and innovation ecosystems", "the development of new business models, new ways of doing things and solutions", "new regulations".	**32% Students** - "promoting creative approaches for problem solving", "being innovative and open for changes and mentality change", "team working", "self-oriented goals", "contributing to the socio-ecological transformation", "a future thinking approach".
39% Entrepreneurs - "mentality and the way of thinking", "organizational changes (i.e. remote working, flat organization)", "sustainability", "cooperation and empowering of people/workers", "creation and implementation of new ideas", "future thinking", "need of regeneration processes in companies to be able to cope with changing environments".	

To become a better employee or manager – 33% of all respondents

26% Academics - "improving productivity and performance (i.e. efficient management)", "leadership", "making positive changes (i.e. improving students' competences, or in the society)", "being a good researcher".	**40% Students** - "good communication", "continuously improving skills and helping others develop their skills", "being more creative and active in adding value to the company and society (i.e. a positive impact)", "being more responsible and respectful towards others", "being happy".
32% Entrepreneurs – "leadership skills and motivating people", "proactive and visionary mentality and self-knowledge", "greater efficiency", "cross-discipline teams", "being open, brave, happy and grateful".	

To achieve something else than stated above – 19% of all respondents

12% Academics - "becoming a leader", "focusing on research".	**24% Students** - "perseverance", "developing new ideas and new ways of doing things", "being a better person", "social and economic independence", "inspiring and impacting positively on people's lives".
19% Entrepreneurs – "developing skills", "having a useful social network" or "team-working".	
All target groups - "continuous learning and improvement", "satisfaction, happiness and success", "sustainability", "keeping a balance between work and family", "making a difference".	

3. WHICH WILL BE THE COMPETENCES NEEDED TO MANAGE FUTURE ORIENTED TASKS IN THE FUTURE?

As seen in Figure 7, similar **competences** are identified by each target group as the ones **that will be needed in the future to manage future oriented tasks, and at the same time, that will need to be improved**. This priorization is made out of the 12 competences presented in the introduction of this report, and the highest the score, the more important the competence is and the more improvement it needs.

Figure 7. Comparison of the different rankings of competences which will be needed to manage future-oriented tasks, combined with the need for improvement in the future.

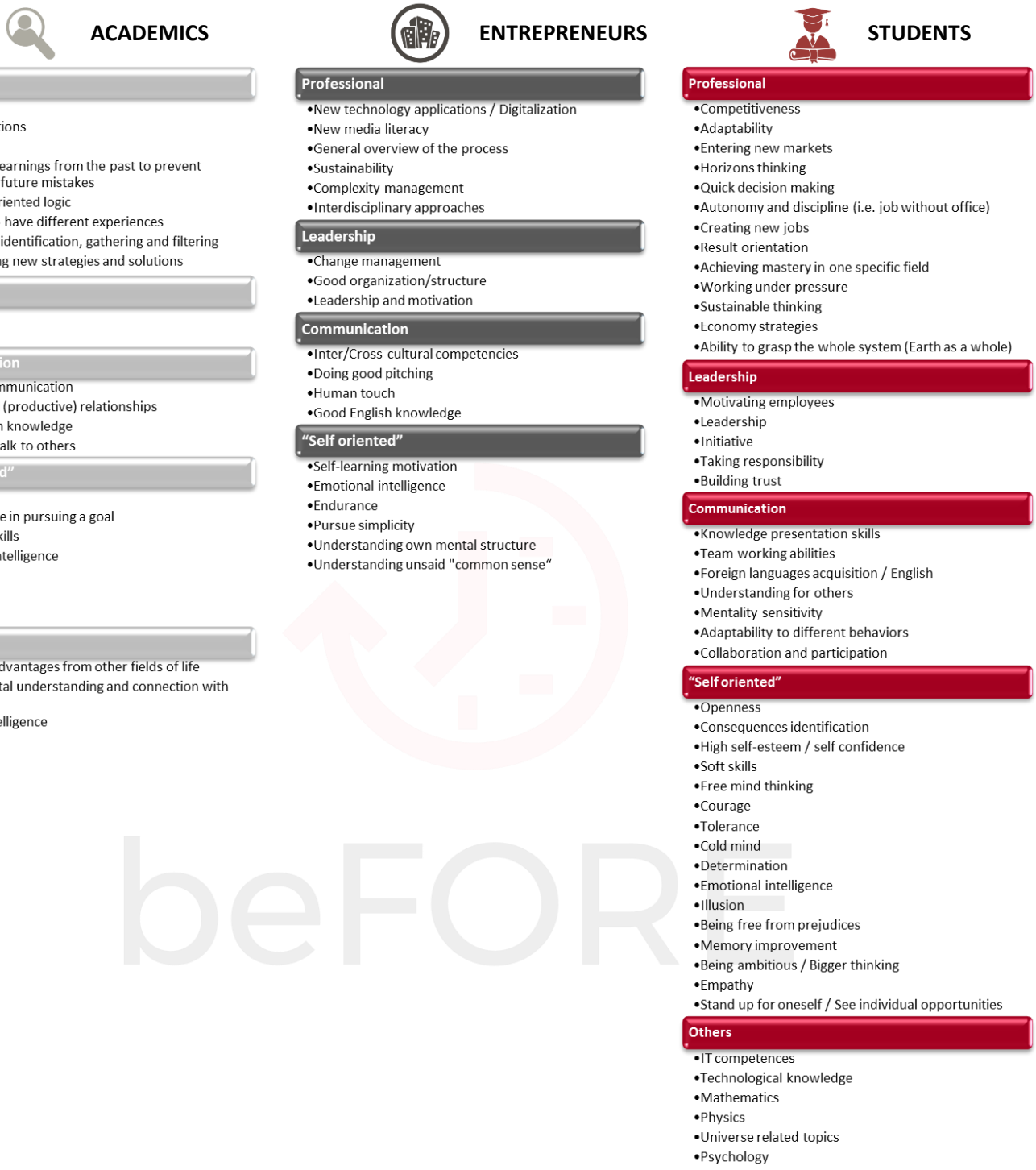
ALL TARGET GROUPS	Academics	Students	Entrepreneurs
Adaptability/ Flexibility	Adaptability/ Flexibility	Adaptability/ Flexibility	Adaptability/ Flexibility
Critical thinking	Critical thinking	Critical thinking	Critical thinking
Thinking creatively	Thinking creatively	Thinking creatively	Influencing others
Developing objectives and strategies	Developing objectives and strategies	Making decisions and solving problems	Developing objectives and strategies
Influencing others	Influencing others	Analysing data or information	Thinking creatively
Making decisions and solving problems	Analysing data or information	Developing objectives and strategies	Making decisions and solving problems

Note: The two cells in white are the ones not repeated in the top 6 of the rest of columns of this table.

On the other hand, target groups proposed **additional new competences that would be needed and improved to manage future oriented tasks in the future**. These can be divided into five general categories: professional competences (i.e. general issues and professional work tasks); communication and teamwork competences (i.e. working with people and building professional relationships); leadership competences (i.e. leading and influencing others); personal or "self-oriented" competences (i.e. personal predispositions, etc.) and other relevant competences that couldn't be included in the previous categories.

The identified competences are distributed according to these main 5 groups, as visualized below in Figure 8, for each target group.

Figure 8. Additional new competences mentioned by each target group.



4. CUMULATIVE RESULTS BY TARGET GROUPS AND FINAL RANKINGS OF COMPETENCES

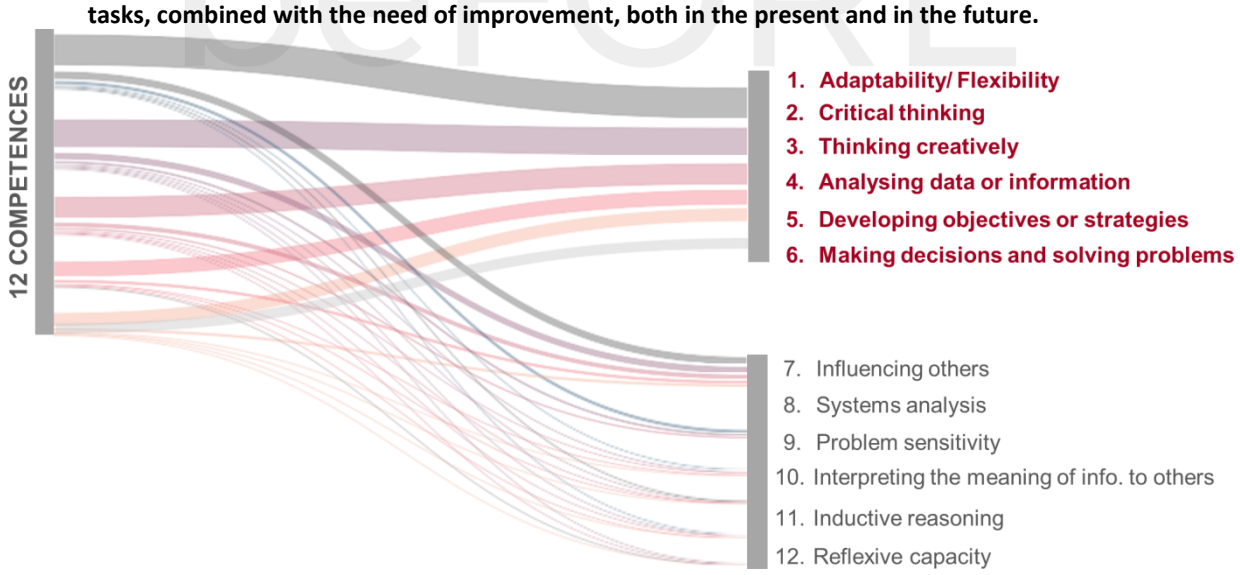
Figure 9 shows the **6 competences prioritized by all target groups and each target group**, as these that are and will be needed to manage future oriented tasks, both at the present and the future, and that are in need of improvement. Figure 10 depicts the final cumulative ranking of the 12 competences analyzed.

Figure 9. Rankings of competences needed in the present and the future to manage future-oriented tasks, combined with the need of improvement, both in the present and in the future.

ALL TARGET GROUPS	Academics	Students	Entrepreneurs
Adaptability/ Flexibility	Adaptability/ Flexibility	Adaptability/ Flexibility	Critical thinking
Critical thinking	Critical thinking	Critical thinking	Adaptability/ Flexibility
Thinking creatively	Thinking creatively	Thinking creatively	Developing objectives and strategies
Alysing data or information	Analysing data or information	Making decisions and solving problems	Thinking creatively
Developing objectives and strategies	Developing objectives and strategies	Analysing data or information	Analysing data or information
Making decisions and solving problems	Influencing others	Developing objectives and strategies	Influencing others

Note: The cells in white is the one not repeated in the top 6 of the rest of columns of this table.

Figure 10. Final list of competences needed in the present and the future to manage future-oriented tasks, combined with the need of improvement, both in the present and in the future.



5. INSIGHT INTO THE RESULTS OF THE SURVEY

When comparing the lists of additional competences proposed by the target groups through open-ended questions in two points in time (now and in approximately 15 years' time) the following conclusions can be drawn:

- ✓ **Respondents were largely positive and open-minded** when proposing additional skills, which could facilitate their professional lives.

- ✓ Competences related to technical or field-specific knowledge and skills were rather absent from the items suggested by the respondents.

- ✓ At the same time when asked about future job titles, rather traditional professional roles were proposed (managers, CEOs, company owners, researchers).

- ✓ All three groups associated future competences with better self-management; self-awareness; people-orientation and co-operation; openness (for other disciplines, cultures); failure and stress tolerance, passion, courage, motivation, change management.

The reasons for the **orientation of all target groups towards more 'human-centred' values and ethical competences** in open questions could be explained as follows:

- ✓ Eight out of the twelve competences that the survey was focused on, emphasized more functional, task-oriented approaches ("analytical thinking", "critical thinking", "developing strategies", "making decisions", "solving problems", "data analysis") combined with original thinking and acting ("thinking creatively" and "adaptability/flexibility"). When asked about selecting the five key choices, respondents needed to prioritize and instinctively they might have been picking the professional ones leaving the social competences behind.

- ✓ The four competences that in the intention of the survey authors referred to psychological traits and relations with others ("reflexive capacity", "problem sensitivity", "influencing others", "interpreting the meaning of information to others") might have not been explained clearly enough. Consequently, the respondents left them out of the ranking and suggested additional items, which in fact were equivalents of the original set (at least to some extent).

- ✓ When asked open questions related to the future, the respondents were in fact answering the question **"what person I would like to become in the future"** and it appeared that individuals who took part in the survey placed personal goals, values, beliefs, motivations among the main constituents of their professional development and personal growth.

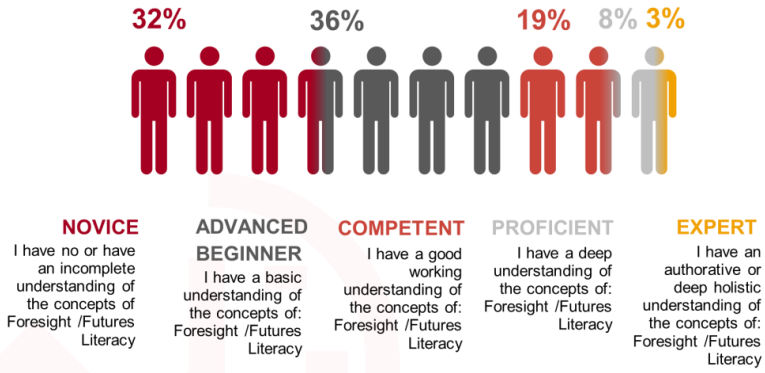
6. IMPLICATIONS FOR THE E-LEARNING PROGRAMME DEVELOPMENT

The results of the survey revealed not only target groups' preferences in relation to particular, previously defined set of competences, but also such aspects as: their general attitude to the future, the level of foresight awareness or, organizational foresight maturity, readiness to increase their future-oriented thinking capabilities or preferred online learning methods, to name just a few.

6.1. Individual foresight awareness and organizational foresight maturity

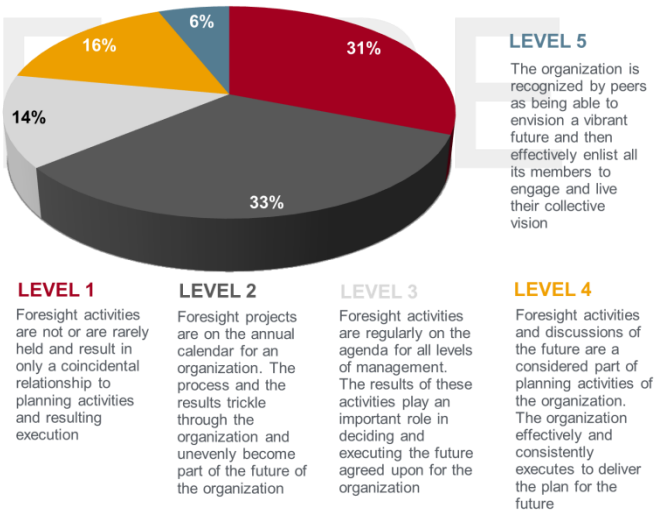
The surveyed population assessed the level of **individual foresight awareness or futures literacy**[2], indicating a relatively low level of future thinking competence in all cases. In fact, 32% of all respondents admitted to "*have no or have an incomplete understanding of the concepts of Foresight /Futures Literacy*"; and only 3% admit to "*have an authoritative or deep holistic understanding of the concepts of Foresight /Futures Literacy*" (see Figure 11).

Figure 11. Level of Foresight awareness.



On the other hand, respondents from the entrepreneurs target group (business representatives) were asked to choose from 5 possible answers, to assess their organizational foresight maturity[3]. Results presented in Figure 12 indicate a **low level of proficiency in the field of Foresight within surveyed companies;** 64% of them assessed this foresight proficiency at the lowest levels (Level 1 or 2) an only 6% admitted the highest level (Level 5).

Figure 12. Companies' proficiency in the field of Foresight (based on the Grim's 5 point scale).



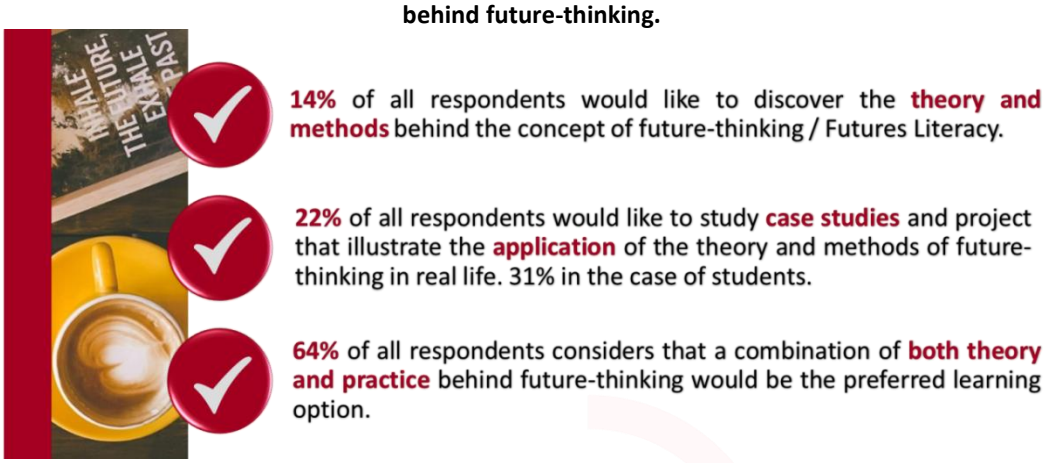
[2] Using 5-point scale: from the least (1-novice) to the most (5-expert) advanced.

[c] Grim T. (2009), *Foresight Maturity Model, Achieving Best Practices in the Foresight Field.* Journal of Futures Studies, 13(4), pp. 69–80.

6.2. Preferred online learning methods

The vast majority of respondents considers that a combination of both theory and practice behind future-thinking would be the preferred learning option (Figure 13).

Figure 13. Choices concerning the preferences towards discovering theory and practice behind future-thinking.



As well as this, a combination of different methods seems to be the preferred online learning option, as this is stated by 41% of all respondents. E-books and downloadable pre-recorded lectures are the second option, followed by the option of a dedicated e-learning platform, as mentioned by 29% and 25% of all respondents respectively.

7. RECOMMENDATIONS AND CONCLUSIONS

The results of the survey constitute one of the essential elements guiding the consortium in the process of creating e-learning courses within the next phases of the project. The main conclusions and recommendations arising from the survey results may be summarized as the following:

In terms of courses' topics.

- ✓ The low level of foresight awareness suggests the need to include not obligatory and probably more theoretical "introduction part" in order to fill the gap in the minimum knowledge base that may be considered as required to be able to effectively participate in the training course.
- ✓ The existence of not very large differences in values of competences' importance also supported by respondents' comments, suggest that all competences are (not equally, but highly) important for questionnaire takers.
- ✓ Considering significant similarities between all target groups in terms of both, learning methods and areas of competences recognized as the most important and requiring improvement, the use of shared modules and the same/similar learning pedagogies is reasonable.
- ✓ Therefore it seems reasonable to design a basic course and accompanying, advanced thematic courses, which could be of interest to any of the target groups' representatives. Both basic, and advanced courses could fall into the below initial four module framework:

- **Module 1:** An overview of the field and bringing in the perspective of personal futures;
- **Module 2:** Rationale behind foresight, areas of its application, outcomes, impacts and risks;
- **Module 3:** Methods / Tools needed to work with the abstract ideas of futures / uncertainty;
- **Module 4:** Communicating the results to various audiences and stimulating agency.

In terms of preferred on-line learning methods.

✓ The course should include a mix of various methods, including downloadable pre-recorded lectures and e-books, based on the construction of an educational e-learning platform, with the aim of conquering a high level of engagement from participants.

In terms of theoretical versus practical character of courses.

✓ Results indicate the need to include both theoretical and practical contents, highlighting specially the latter ones. This way, adopting the 'competence' approach in the course's architecture and pedagogies, with high involvement of practical applications seems to be the most recommended option.

The course will be piloting in 2019. Please visit our website: futureoriented.eu to find out more about the course and our beFORE project.

ANNEX 1 – Respondents' profile

This section includes the basic characteristics of the people answering the survey.

The following target group sampling criteria was followed:

- Students of any year of study or recent graduates (including PhD level), of any faculty (preference given to: entrepreneurship, innovation management, business management, engineering); including Futures Studies faculty.
- Teachers and academic researchers at any stage of career representing any faculty (preference given to: entrepreneurship, innovation management, business management, engineering), excluding those directly related to Futures Studies.
- Entrepreneurs representing firms of any size (note: in case of micro and small firms interest in increasing the firm's innovativeness level was a must) and operating in any sector of economy.

Figure 14. Age of all Respondents.

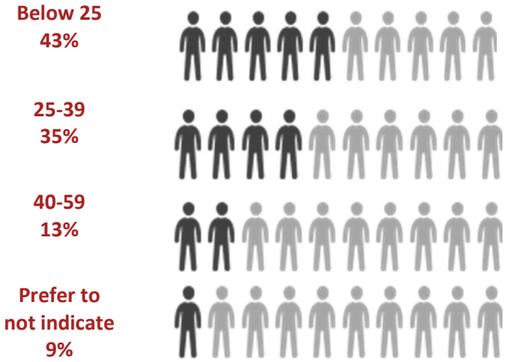


Figure 15. Gender representation.

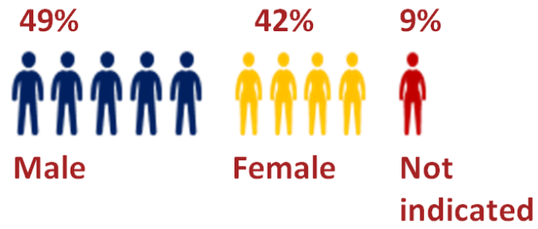


Figure 16. The company's business field - Entrepreneurs.

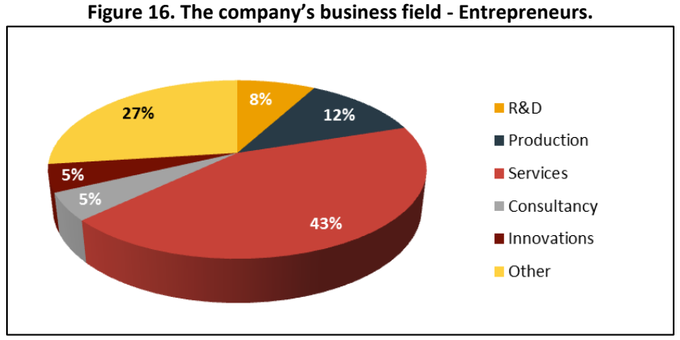


Figure 17. Size of the company - Entrepreneurs.

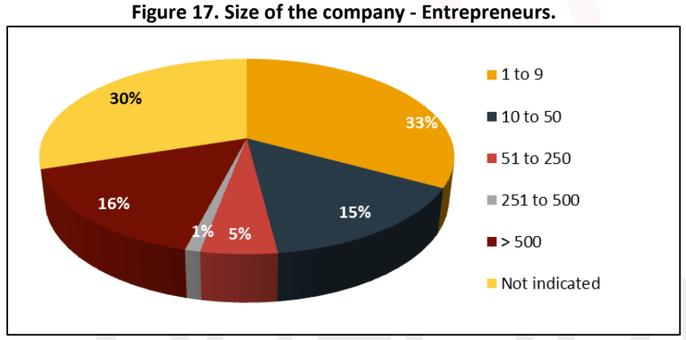


Figure 18. Position in the organisation - Entrepreneurs.

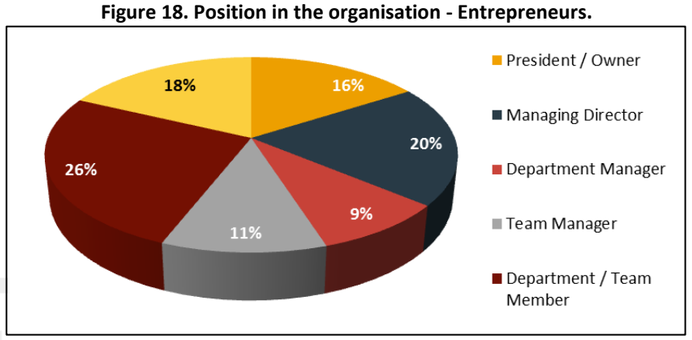


Figure 19. Field of research interest - Academics.

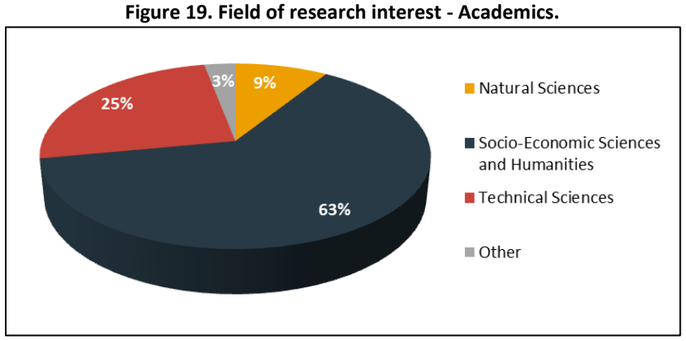


Figure 20. Position in the organisation - Academics.

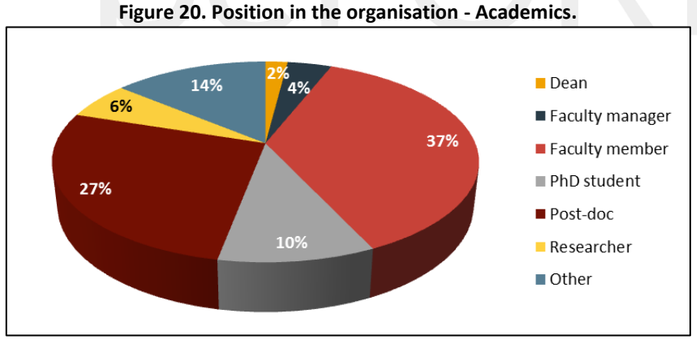
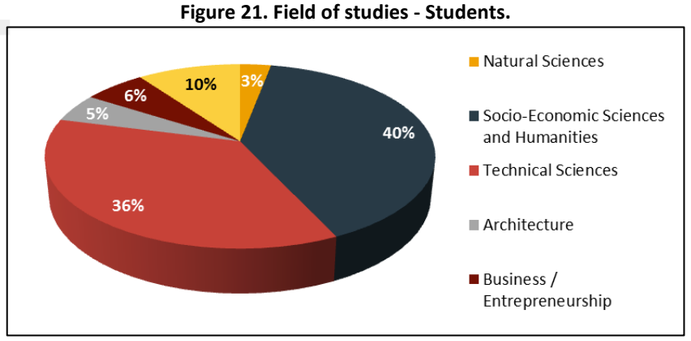


Figure 21. Field of studies - Students.



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