Smooth Transition from Academia to a Career in AgroBiotechnology:

Designing Carrier Plan

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SURVEY REPORT

Reported by Universidad Miguel Hernández (A.A. Carbonell Barrachina y A. J. Signes Pastor)

Co-funded by
the European Union

SUA Slovak University of Agriculture in Nitra
UNIVERSITAS Miguel Hernández
Tomas Bata University in Zlín
IDEA Education Agency for Development and Innovation
MELLIS KNOWLEDGE TO PRACTICE

Introduction

General Survey Application

The project partners held an online meeting to revise project activities together. After the kick-off meeting, they began undertaking their assigned tasks.

Responsibilities and Tasks

- UMH was the leading partner of Work Package 2. SUA took the lead in developing the initial survey content. The partners based this on 4 different topics in career development in line with the contemporary requirements.
- All the partners participated in survey question preparation and data collection through questionnaires, literature reviews, and teamwork.
- After the question preparations and arrangements, partners applied the surveys to their students, agrobiotech academicians and other relevant experts.
- Partners prepared their survey reports, including survey results and highlighting 5 important outcomes at the end.

Date of Evaluation

05.June.2024

Author(s):

Names and surnames; position

Ángel A. Carbonell-Barrachina – Professor at UMH; Antonio J. Signes Pastor – Senior Researcher at UMH; Esther Sendra Nadal – Professor at UMH; Francisca Hernández García – Professor at UMH; Luís Noguera Artiaga – Associate Professor at UMH; David López Lluch – Professor at UMH; Leontina Lipan – Research Collaborator; Francisco José del Campo Gomis – Professor at UMH

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Aims and Objectives of the Survey Application

The survey is designed to gather valuable insights from individuals interested in pursuing careers in the field of agrobiotechnology. The responses of the questions would directly contribute to the development of five key modules that will equip agrobiotech students and graduates with the knowledge, skills, and strategies necessary to navigate their professional pathway.

Overall Objective:

Understand the aspirations, challenges, and needs of individuals in order to enter the agrobiotechnology industry.

Section-Specific Objectives:

Section 1: Demographic Information

- Identify the current position of the participants
- Determine the participants' seniority in sector/years of study in university

Section 2: Self-Assessment and Goal Setting

- Encourage self-reflection and analysis of personal strengths and weaknesses.
- Help individuals visualise their ideal work environment within agrobiotechnology.
- Develop an understanding of the skills and qualities valued in the industry.

Section 3: Networking, Job Search Strategies, and Interview Tips

- Highlight the importance of networking in building successful careers.
- Inquire about job search strategies within the agrobiotechnology sector.
- Reveal the strategies for preparing and excelling in job interviews.

Section 4: Professional Development and Training

- Identify obstacles faced by individuals seeking professional development opportunities.
- Analyse the ideal balance between theoretical knowledge and practical experience.
- Showcase examples of effective training programs within agrobiotechnology.

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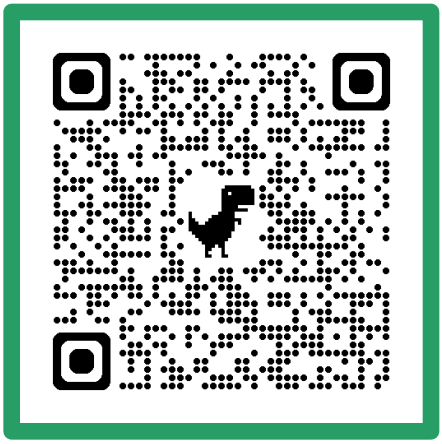
Section 5: Career Advancement, Mentorship, and Coaching

- Define the qualities individuals seek in a mentor within agrobiotechnology.
- Identify key leadership qualities for aspiring managers in the industry.
- Explore strategies for fostering collaboration and innovation in team settings.



We invite interested researchers and educators to see the survey questions on an anonymous survey form whose QR code is provided above and share their opinions with us as well.

Methodology

Evaluation Methods

Participants filled in a survey form including 4 multiple choice questions and 20 with checkboxes.

Sample

60 responders participated in the survey applied in Spain. 10 of them were academicians, 14 were sector representatives, 33 students, and 3 other such as Research Centre and Innovation.

Data Analysis Procedures

Overall, the survey was completed by 61 participants. However, one of the responses was not included due to a lack of information. The questionnaire contains two types of questions: those with only one option to answer (multiple choice) and those with multiple answers (checkboxes). For the

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questions with only one answer, the overall percentage was calculated and plotted. For the questions with multiple options, the percentage of responses for each option was calculated and plotted.

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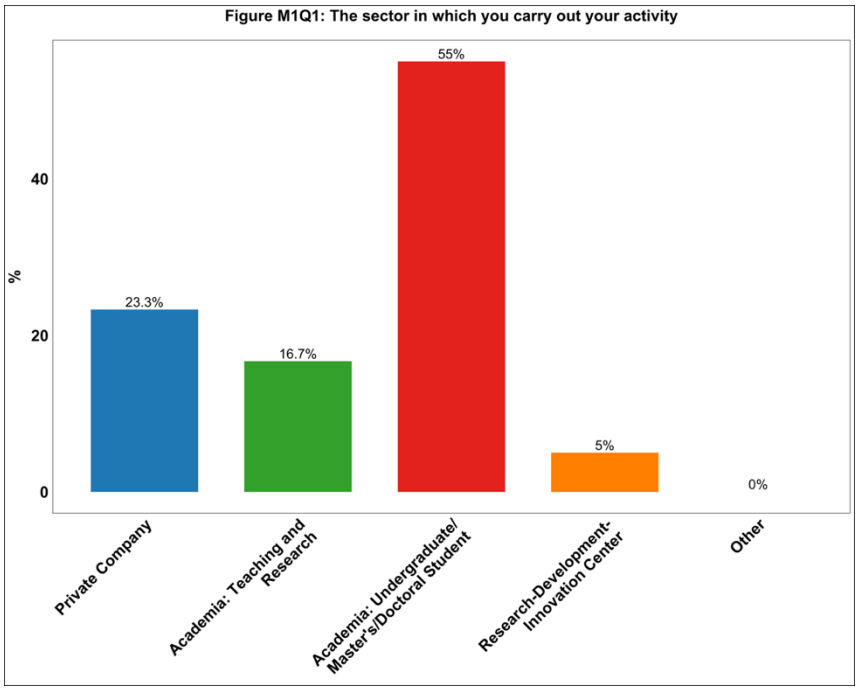
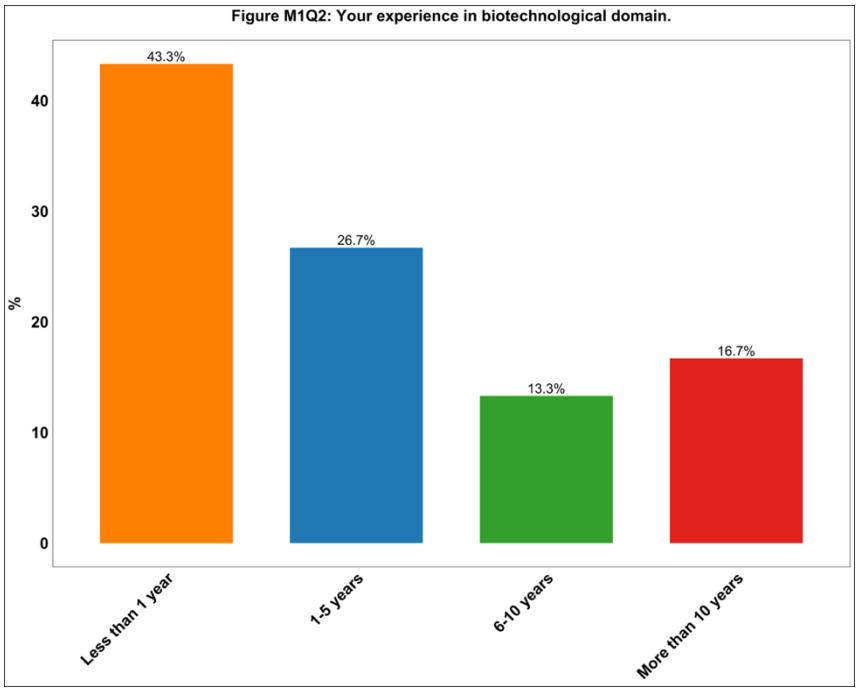
Results

Module 1 (M1) – Question 1 (Q1) to Question 4 (Q4)





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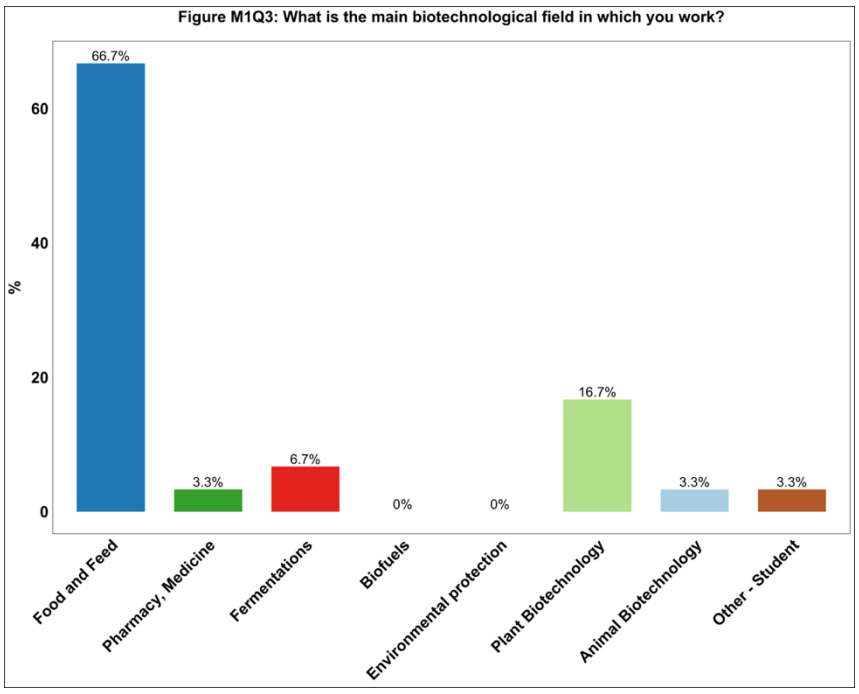

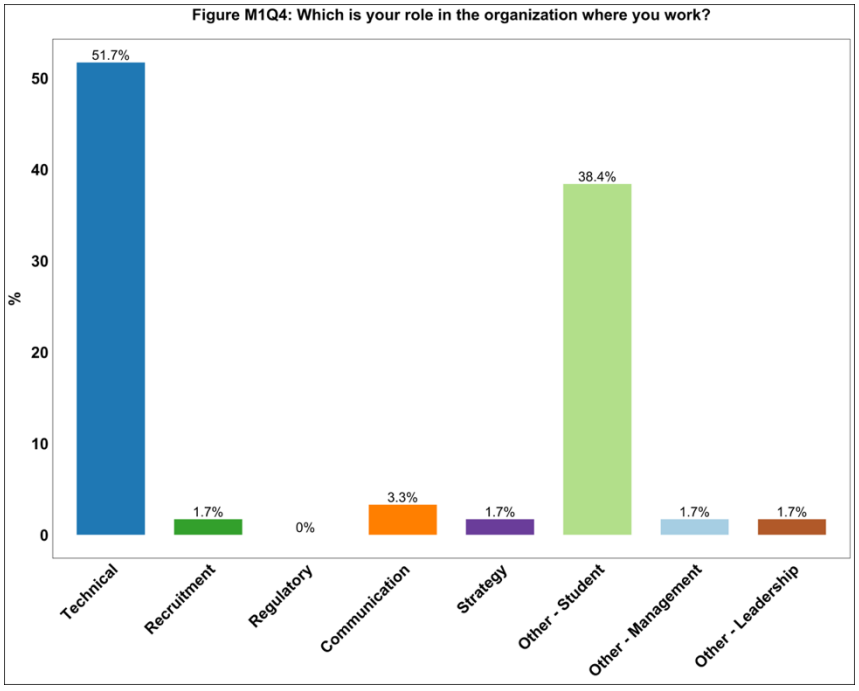

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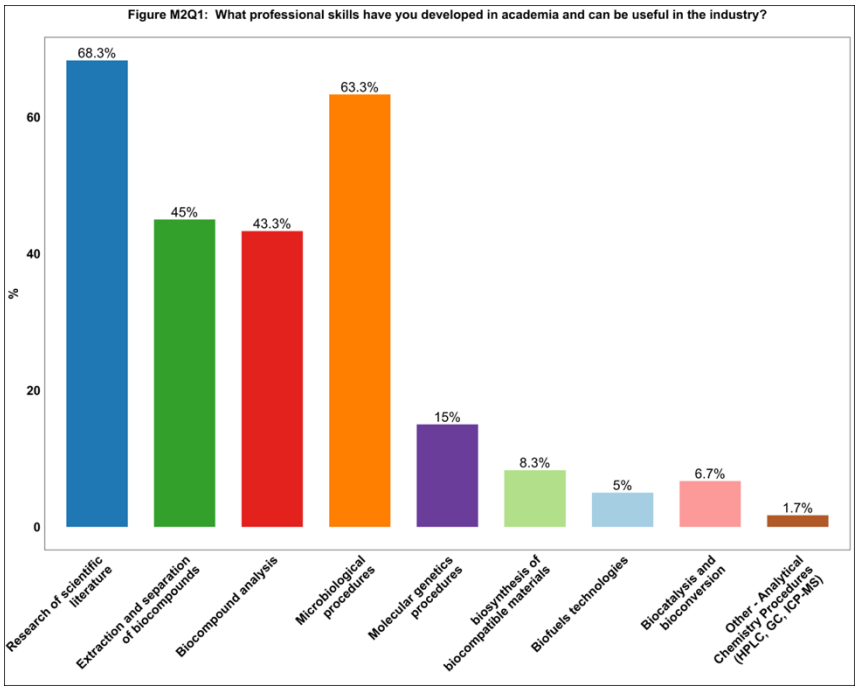
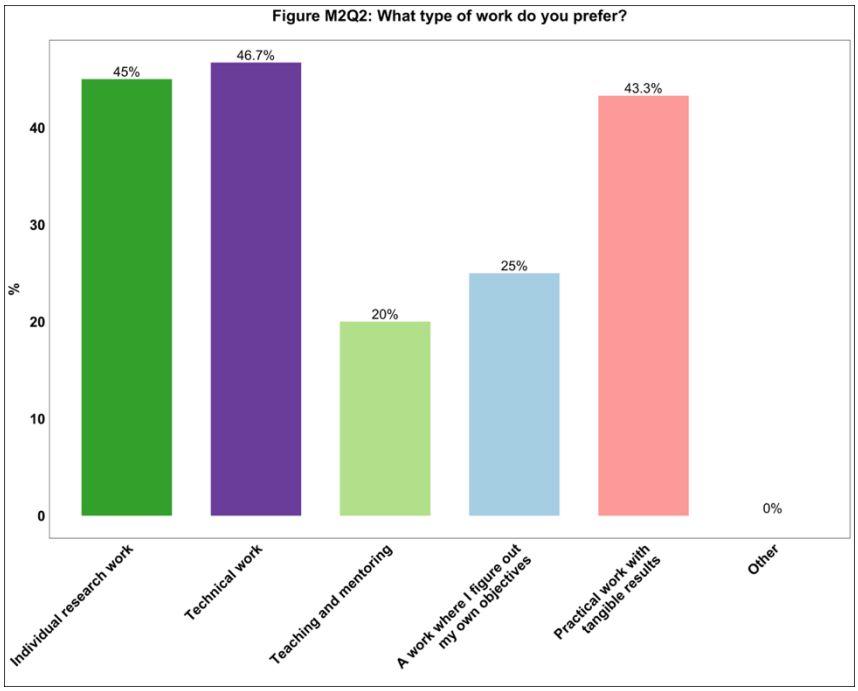
Module 2 (M2) – Question 1 (Q1) to Question 5 (Q5)





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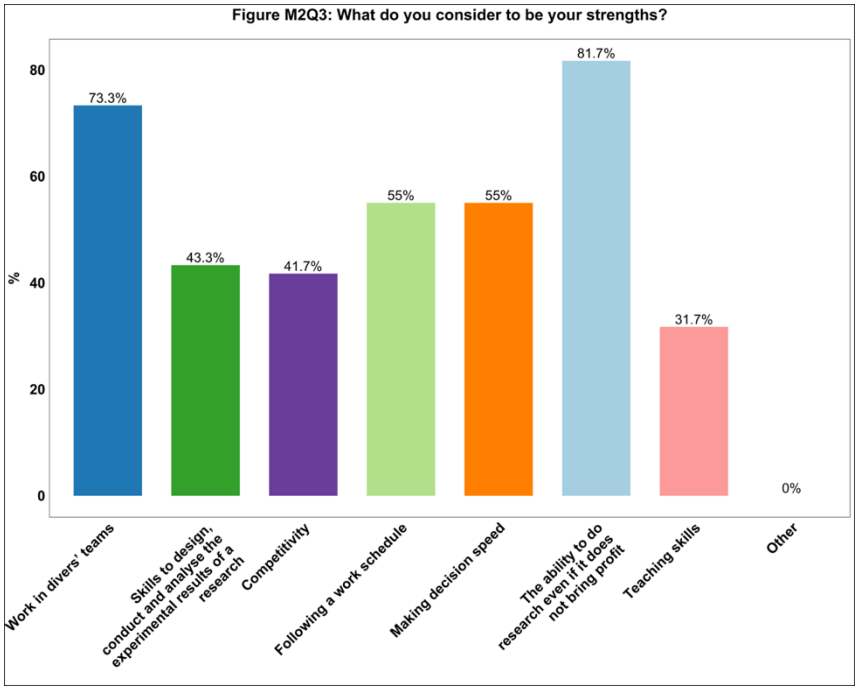

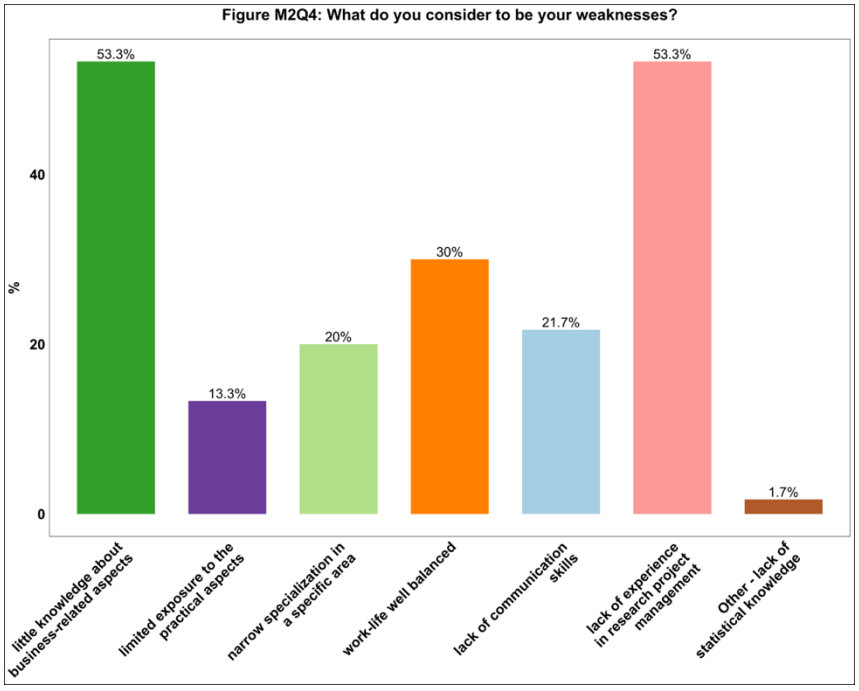

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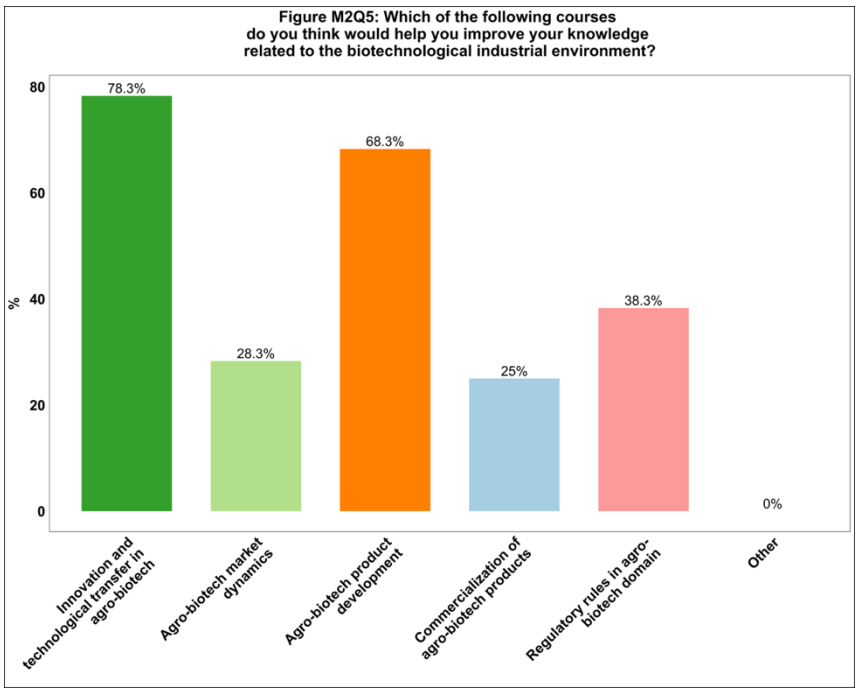
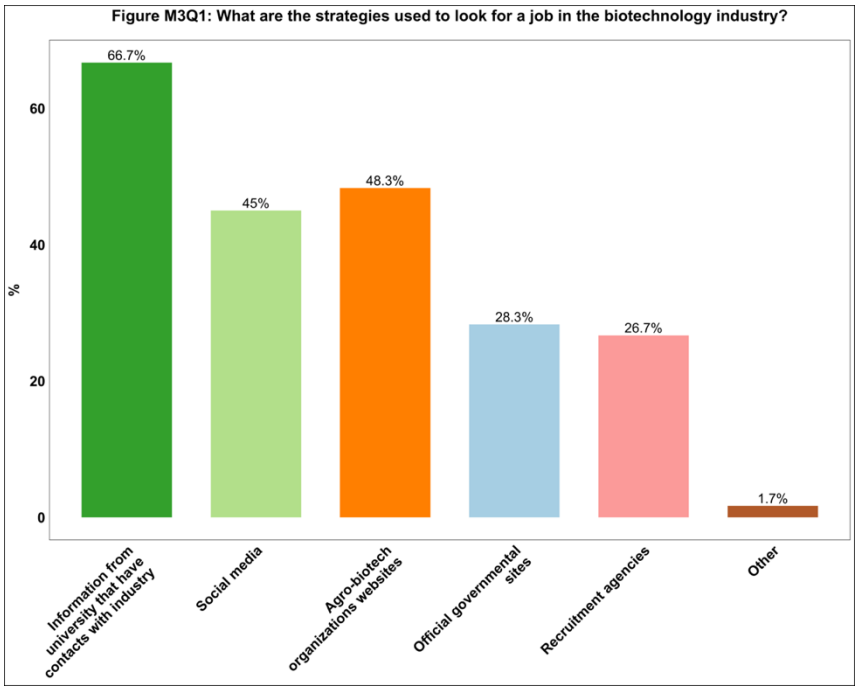


Module 3 (M3) – Question 1 (Q1) to Question 5 (Q5)



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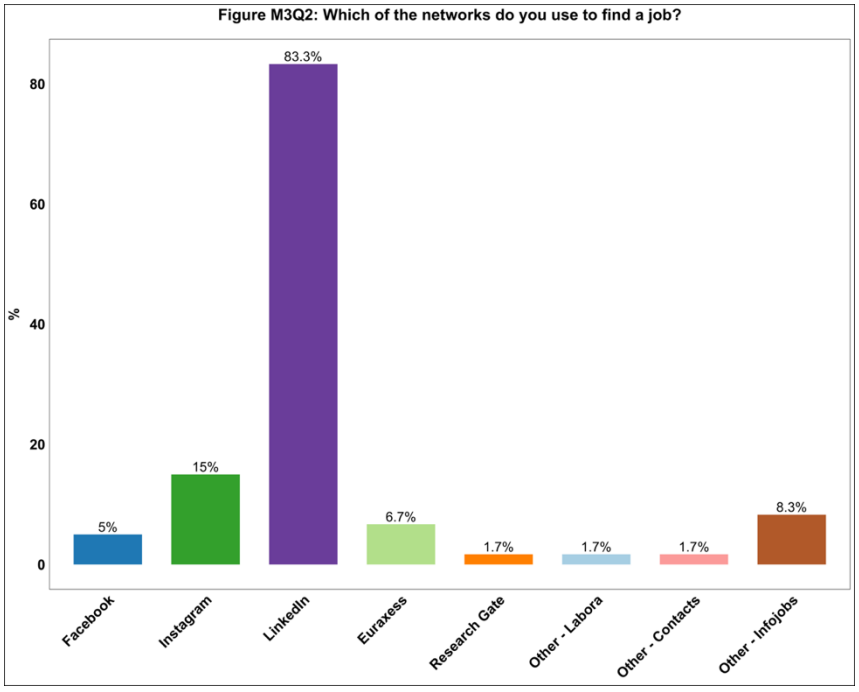

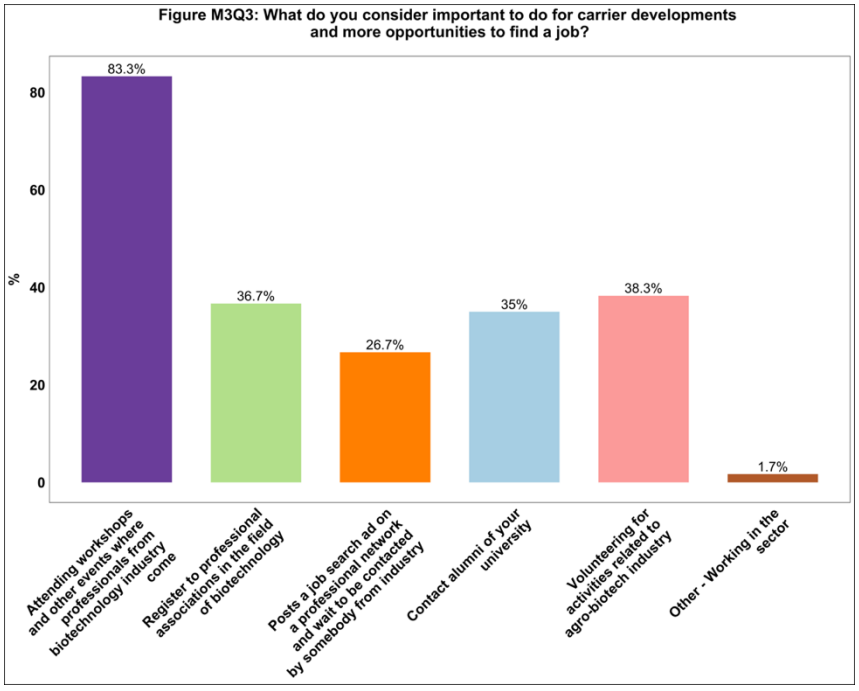

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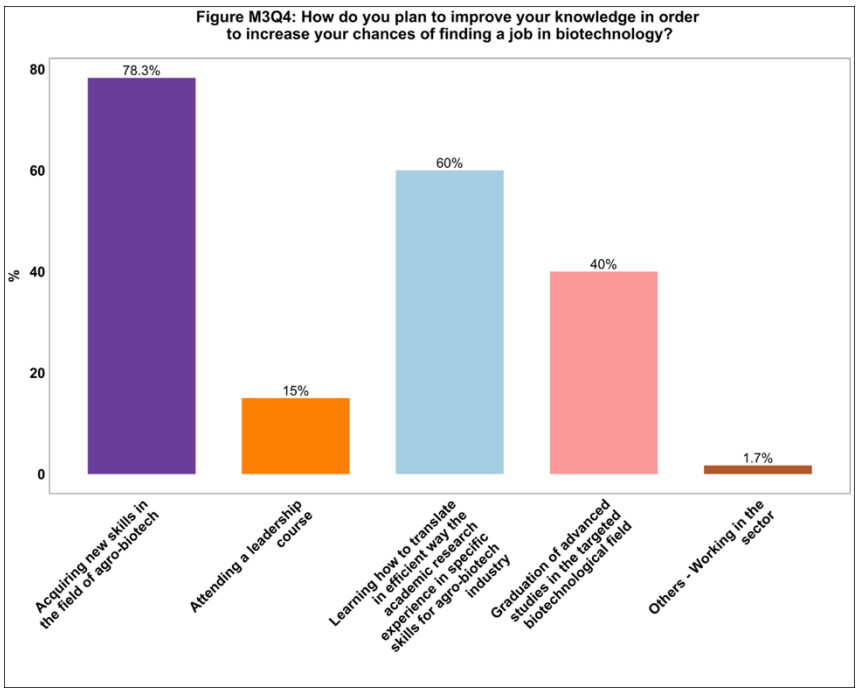

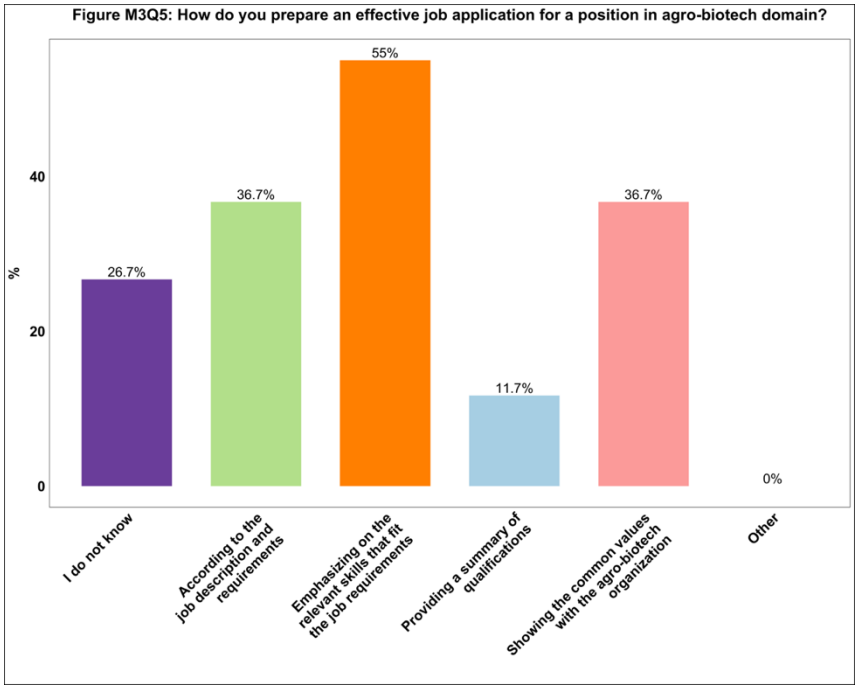

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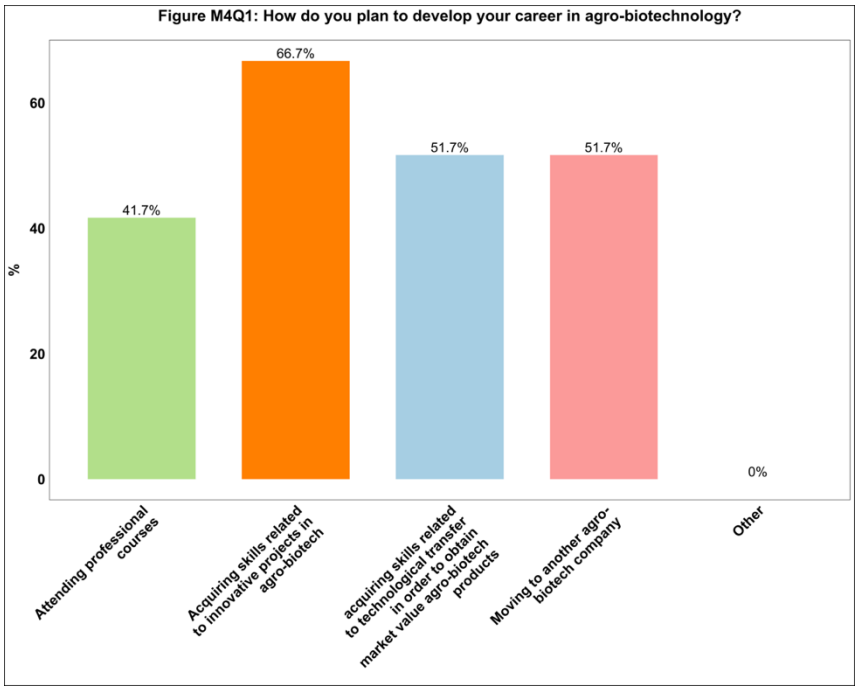
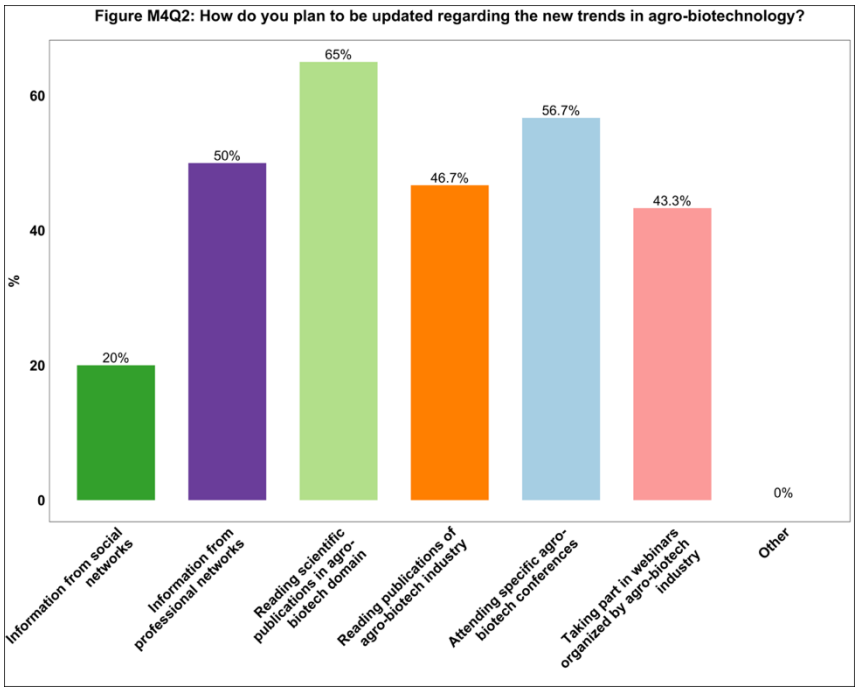
Module 4 (M4) – Question 1 (Q1) to Question 5 (Q5)





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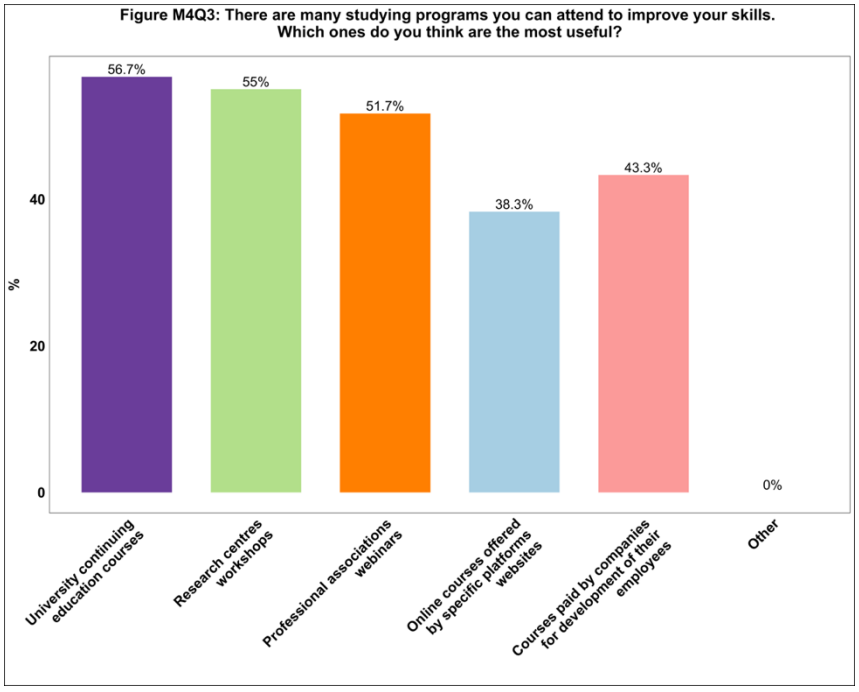

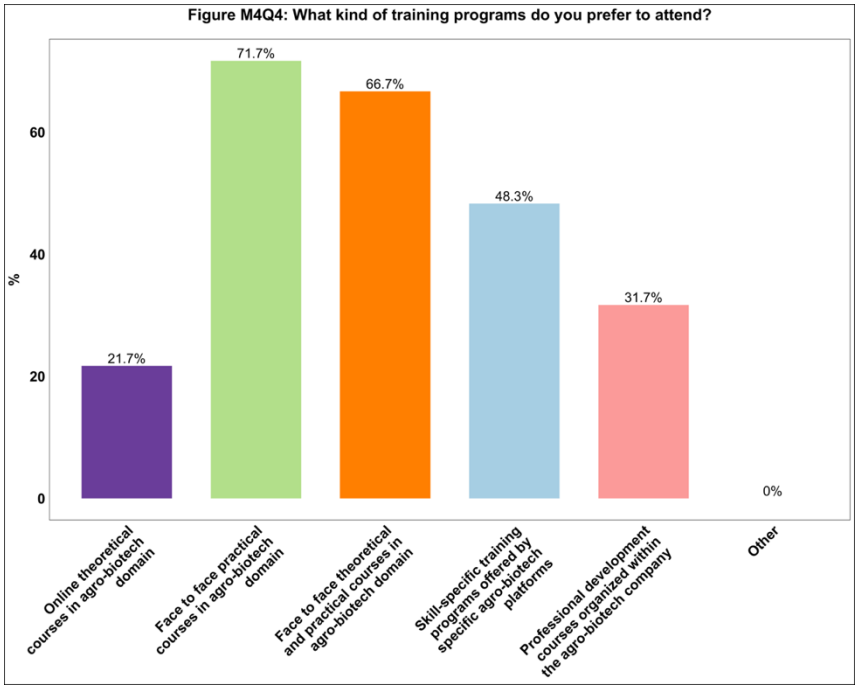

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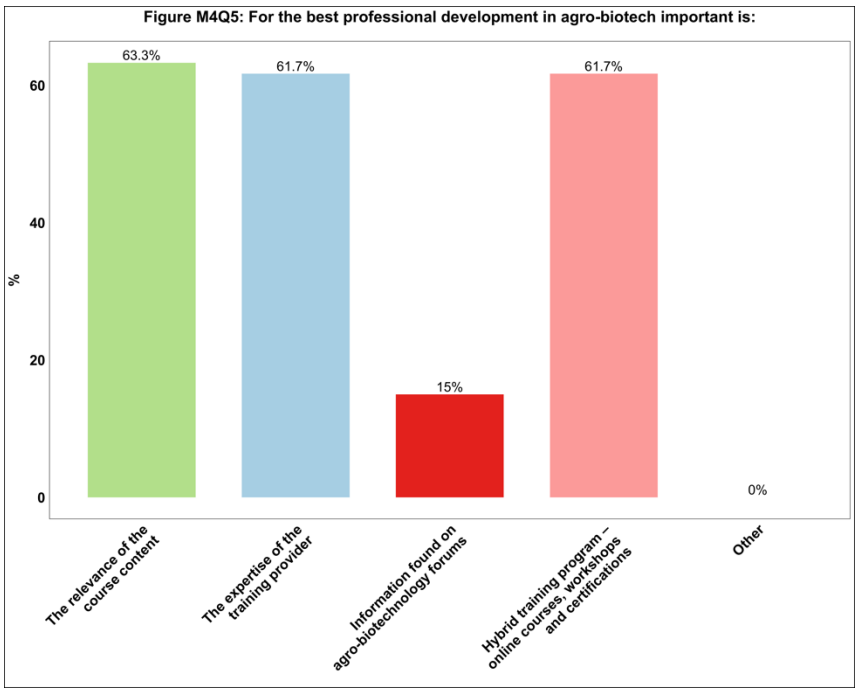
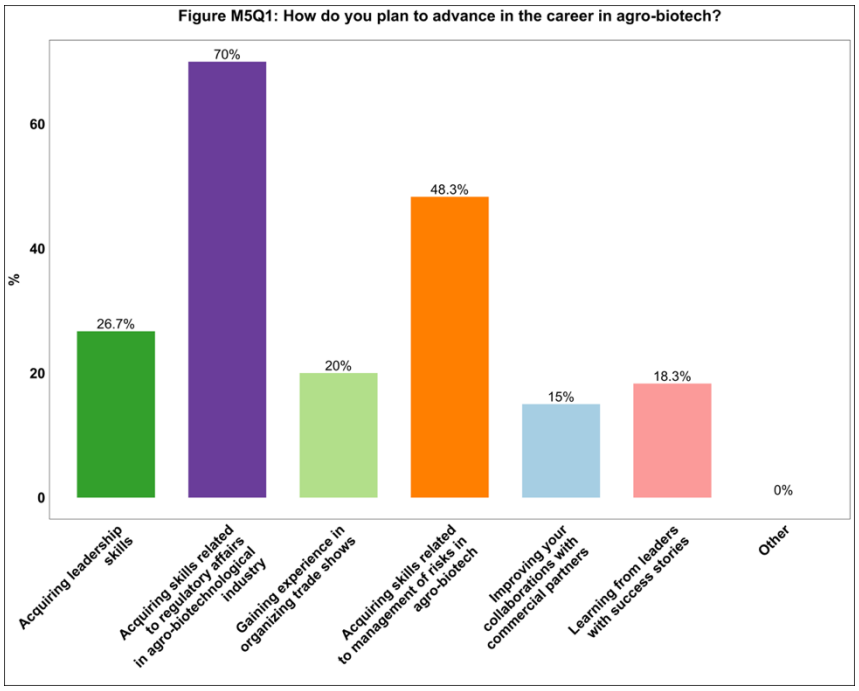


Module 5 (M5) – Question 1 (Q1) to Question 5 (Q5)



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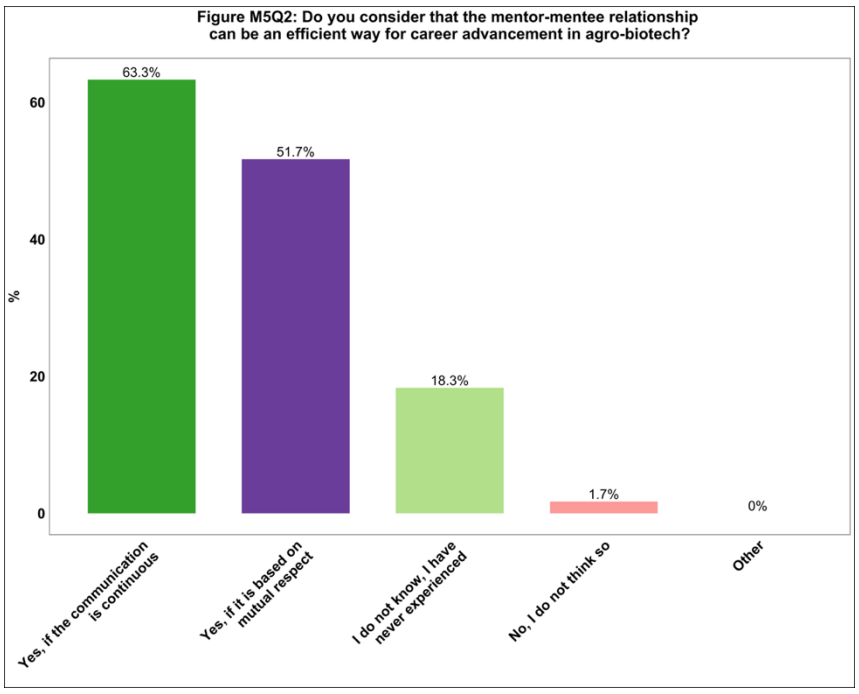

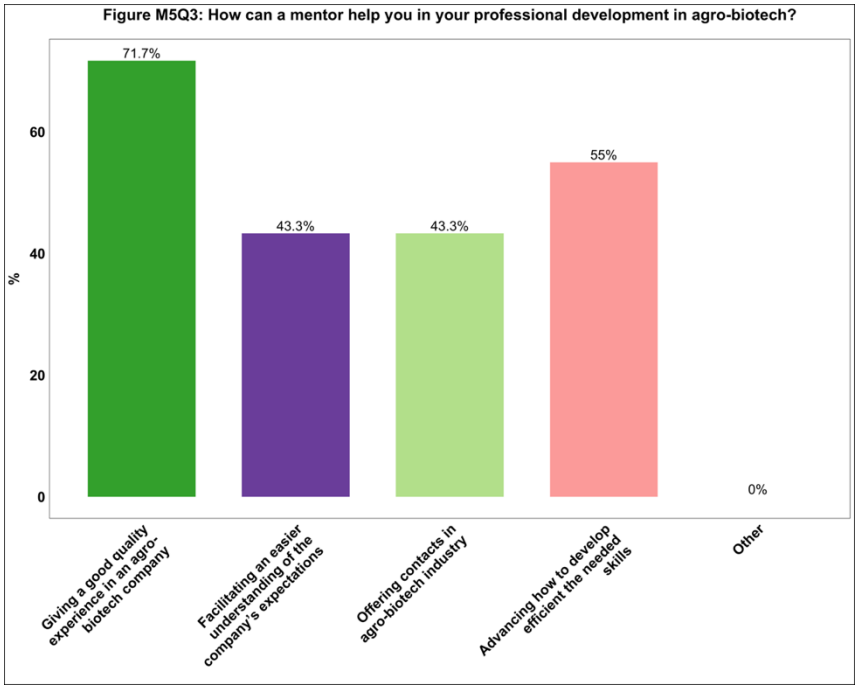

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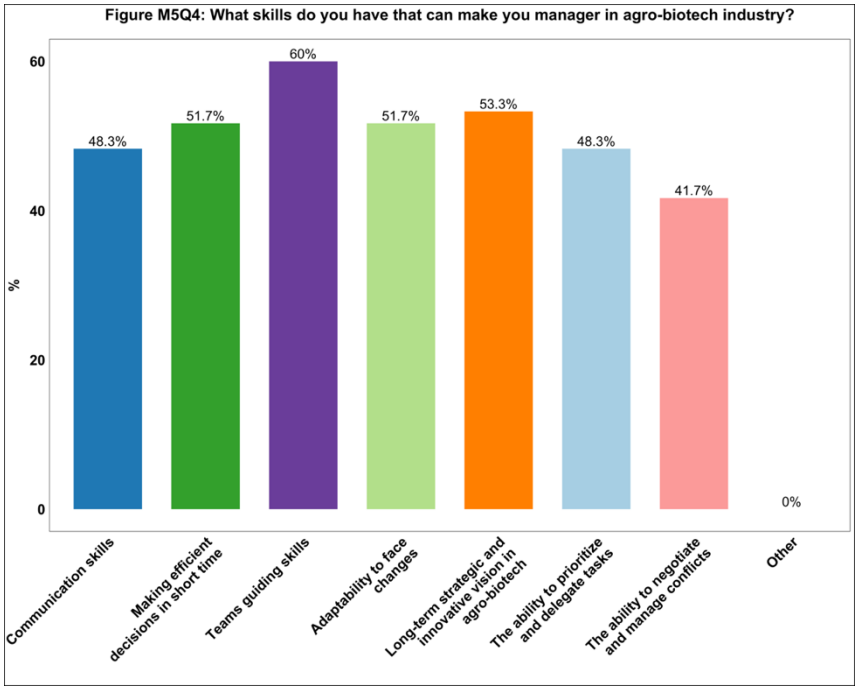

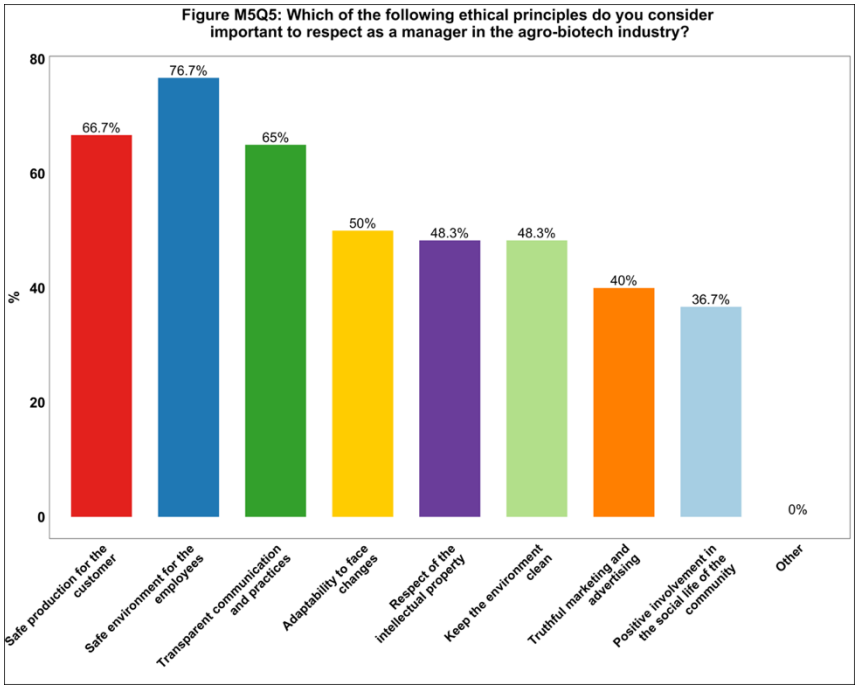

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Analysis and Discussion

Interpretation of Results:

Regarding Module 1, over half of the participants were students, followed by those working in private companies and academic institutions. A smaller percentage came from research and development innovation centres. Most participants had less than 1 year or between 1-5 years of experience, though about 16% reported over 10 years of experience in the biotechnology domain. The most represented sector was food and feed, with over 66% of participants, followed by plant biotechnology at 16.7%. In terms of their roles, half of the participants reported technical positions, while about 40% indicated they are still students.

Regarding Module 2, the professional skills developed in academia that are useful in the industry include researching scientific literature and performing microbiological procedures, followed by the extraction and separation of biocompounds and their analysis. The most reported types of work were technical tasks, individual research, and practical work with tangible results. The most frequently selected strength was the ability to conduct research even if it does not bring immediate profit, and the ability to work in diverse teams. Other strengths were more evenly distributed. The most noted weaknesses were limited knowledge about business-related aspects and a lack of experience in research project management, with a lack of statistical knowledge also mentioned. The most selected courses were those on innovation and technological transfer in agro-biotech and agro-biotech product development.

Regarding Module 3, the most mentioned strategies for finding jobs in the agrobiotechnology industry included information from universities with industry contacts, as well as social media and agro-biotech organizations and websites. LinkedIn was clearly the most used network for job searching. Attending workshops and other events with biotechnology industry professionals was highlighted as the most important action for career development and job opportunities. To improve knowledge and job prospects in biotechnology, acquiring new skills in agro-biotech and learning how

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to effectively translate academic research experience into specific skills for agro-biotech were the most common approaches. Emphasizing relevant skills that fit the job requirements was the most selected strategy for preparing an effective job application, followed by tailoring the application to the job description and requirements, and demonstrating shared values with the agro-biotech organization.

Regarding Module 4, acquiring skills related to innovative projects in agro-biotech was the most common plan for career development, closely followed by acquiring skills related to technological transfer to add value in agro-biotech and moving to another agro-biotech company. Reading scientific publications in the agro-biotech domain and attending specific agro-biotech conferences and professional networking events were the most common actions for staying updated on new trends in agro-biotechnology. The most selected study programs for skill improvement were university continuing education courses (permanent education), research centre workshops, and professional association webinars. Face-to-face practical courses and face-to-face theoretical and practical courses in the agro-biotech domain were the most mentioned preferred training programs. The best professional development strategy was shared between the relevance of the course content, the experience of the training provider, and hybrid training programs, including online courses, workshops, and certifications.

Regarding Module 5, acquiring skills related to regulatory affairs in agro-biotechnology was clearly the most important action for career advancement in the agro-biotech sector. Most participants reported that the mentor-mentee relationship can be an effective way for career advancement if it is based on continuous communication and mutual respect. A mentor can be particularly helpful in providing quality experience in an agro-biotech company and in developing the necessary skills efficiently. Participants reported an even distribution of choices for skills needed to become a manager, with team-guiding skills leading. The most important ethical principle for a manager was ensuring a safe environment for employees, followed by safe production for customers and transparent communication and practices.

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Conclusion

Summarise 5 main takeaways from the analysis in 5 items.

Over half of the participants were students, with most having less than 5 years of experience and around 16% having over 10 years, predominantly in the food and feed sector.

The most effective job search strategies in agrobiotechnology included using university-industry contacts, social media, LinkedIn, attending industry events, and aligning applications with job descriptions and relevant skills.

The most common career advancement plans included acquiring skills through innovative projects, technological transfer, switching companies, staying updated via publications, conferences, networking, and participating in preferred continuing education courses, workshops, and practical webinars.

Acquiring regulatory affairs skills, effective mentor-mentee relationships, team-guiding abilities, and adherence to ethical principles like ensuring safety and transparent communication were identified vital for career advancement in agro-biotech.

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