Appendix 1
Quantitative instrument of research

FRAMELOG: European Framework for the 'Knowledge Triangle' in HEIs in the Logistics sector

A questionnaire for testing FRAMELOG outputs

FRAMELOG is an Erasmus+ strategic partnership project co-funded by the European Commission. Implemented from September 2016 to August 2019, it aims at enhancing higher education institutions' (HEIs') contribution to Logistics' job-market and growth by laying the bases for effective cooperation among education, innovation and business – the three sides of the Knowledge Triangle (KT).

This questionnaire focuses on identifying Logistics players' and stakeholders' opinions with regard to the most state-of-the-art intellectual outputs obtained, FRAMELOG and the Guidelines to implement the KT in HEIs and assure its quality at the same time. The data obtained are to be used in analyses, conclusions and proposals with a general character, no individual respondent of the questionnaire will be identified in the report. Moreover, we highlight the importance of the answers offered and we thank you in advance for completing this important questionnaire.

The questionnaire consists of four main parts corresponding to the phases of Quality Assurance management system: **Plan** - **Do** - **Check – Act**. With regard to every part, questions related to the **challenges** in implementing the KT, use of the **indicators** to assess quality HEIs deliver in Logistics and the **guidelines** for enhancing the cooperation level within the KT are addressed.

Q1. Which one of the three key actors of the KT do you represent? Please tick (√).
□ Higher education institution   □ Research institution   □ Business

Q.2. Which is your position in the organization you represent?................

PLANNING

Q.3. To what extent do you think the following is a **challenge** in **planning** high-quality cooperation between HEIs, businesses and research for describing HEI's educational offer in Logistics? *Please circle the number best representing your opinion.*

Challenges	Not at all				To a great extent
Integrating the KT in Quality Assurance policies	1	2	3	4	5
Planning stakeholders' engagement (such as: guest professors, researchers, business professionals etc.)	1	2	3	4	5
Ensuring appropriate human and material resources	1	2	3	4	5
Aligning academic offer to business requirements and innovative research	1	2	3	4	5
Implementing student-centred learning focused on what students really need in terms of knowledge, skills and competences	1	2	3	4	5
Applying competence-based approach to teaching which implies strong consideration of business requirements	1	2	3	4	5
Obtaining course accreditation by public institutions (e.g. ministries) and/or private institutions (e.g. professional bodies)	1	2	3	4	5

Q.4. To what extent do you think the following **indicators** are effective for assessing the quality of academic education on Logistics in HEIs, in its **planning** phase? *Please circle the number best representing your opinion.*

Indicators	Not at all				To a great extent
The availability of courses or exams focused on Logistics	1	2	3	4	5
The availability of dedicated staff for specific activities (curricular and extra-curricular activities) in Logistics	1	2	3	4	5
The presence of research centres for activities focused on Logistics	1	2	3	4	5
Selecting educational programmes with the collaboration of business and research	1	2	3	4	5
Definition of educational curriculum with the collaboration of business and research	1	2	3	4	5
Choosing lecturers with the collaboration of business and research	1	2	3	4	5
Selecting educational methods with the collaboration of business and research	1	2	3	4	5
Designing governance structures for strategic planning in Logistics activities (such as job fairs, collaborations etc.)	1	2	3	4	5

Q.5. To what extent do you think the following **guidelines** will help in providing high-quality cooperation between HEIs, businesses and research institutions, in the **planning** phase of education? *Please circle the number best representing your opinion.*

Guidelines	Not at all				To a great extent
Including Quality Assurance actions in the HEIs', business' and research institutes' visions & missions	1	2	3	4	5
Developing joint Quality Assurance procedures with business and research	1	2	3	4	5

Engaging HEIs' governing bodies in the definition and implementation for Quality Assurance	1	2	3	4	5
Creating governance bodies to plan educational and research activities in Logistics	1	2	3	4	5
Developing a stakeholders' network	1	2	3	4	5
Ensuring appropriate human and material resources for the implementation of FRAMELOG	1	2	3	4	5
Involving business, research and public administration for the provision of appropriate resources for HEIs	1	2	3	4	5
Integrating inputs from business and research for developing joint education and training activities	1	2	3	4	5
Engaging students in educational needs analysis with regards to Logistics	1	2	3	4	5
Involving business and research in the analysis of learning needs	1	2	3	4	5
Selecting educational disciplines, contents and methods in a collaborative framework between HEIs, business and research	1	2	3	4	5
Developing competence based education	1	2	3	4	5
Set-up work-based assessment procedures	1	2	3	4	5
Embedding industry experts as lecturers in educational courses	1	2	3	4	5
Selecting and training staff in line with FRAMELOG	1	2	3	4	5
Setting-up cooperative learning environment for supporting innovation in Logistics	1	2	3	4	5
Checking compliance and conformity of the courses according to regional/national/European standards	1	2	3	4	5
HEIs' applying for national and/or European accreditation of Logistics courses	1	2	3	4	5

PERFORMANCE

Q.6. To what extent do you think the following is a **challenge** in **performing** high-quality cooperation between HEIs, businesses and research institutions when providing education on Logistics? *Please circle the number best representing your opinion.*

Challenges	Not at all				To a great extent
Aligning professional development of teaching staff to business	1	2	3	4	5
Implementing innovative and experiential learning (laboratories, demonstrations, experiments, simulations etc.)	1	2	3	4	5
Cooperating with business and research at organization level	1	2	3	4	5

Q.7. To what extent do you think that the following **indicators** are effective for assessing the quality of academic education on Logistics in HEIs, in its **performing** phase? *Please circle the number best representing your opinion.*

Indicators	Not at all				To a great extent
Performing research activities in Logistics topics	1	2	3	4	5
Availability of conjoint research projects with business and research and provision of consultancy in Logistics to business	1	2	3	4	5
Organising events on Logistics with the cooperation of business and research	1	2	3	4	5
Coordination with business and research in offering of internships in Logistics	1	2	3	4	5

Coordination with business and research in developing thesis on Logistics topics	1	2	3	4	5
Organising visits by business professionals in HEIs to deliver lectures related to Logistics	1	2	3	4	5
Availability of temporary or permanent partnerships in Logistics with business and research institutions	1	2	3	4	5
Support provided by business and research institutions in relation to PhDs, scholarships, fellowships, professorial chairs in Logistics	1	2	3	4	5

Q.8. To what extent do you think the following **guidelines** will successfully help in providing high-quality cooperation between HEIs, businesses and research institutions, in the **performance** phase of education? *Please circle the number best representing your opinion.*

Guidelines	Not at all				To a great extent
Supporting & facilitating continuous training for teachers and trainers aligned with business	1	2	3	4	5
Involving business and research in the updating and training activities for teachers and trainers	1	2	3	4	5
Including practical learning activities and work-field applications in the education delivery methods and tools	1	2	3	4	5
Implementing stakeholders' engagement & communication strategies	1	2	3	4	5
Practicing conjoint education and training activities with business and research	1	2	3	4	5

Improving internships aligned with educational and business needs	1	2	3	4	5
Promoting theses, PhDs, research grants, scholarships, fellowships and professional chairs	1	2	3	4	5
Disseminating results from the cooperation	1	2	3	4	5

CHECK

Q.9. To what extent do you think the following is a **challenge** in **checking** the quality of collaboration between HEIs, businesses and research institutions? *Please circle the number best representing your opinion.*

Challenges	Not at all				To a great extent
Developing a longitudinal graduate tracking system	1	2	3	4	5
Applying feedback loops mechanisms among the three sides of the KT	1	2	3	4	5

Q.10. To what extent do you think that the following **indicators** are effective for assessing the quality of academic education in Logistics in HEIs, in its **check** phase? *Please circle the number best representing your opinion.*

Indicators	Not at all				To a great extent
Control of the alignment of the Logistics course with external partners at the end of the course	1	2	3	4	5
Employments as a result of Logistics internships/projects	1	2	3	4	5
Production of intellectual outputs (papers, patents, software etc. in Logistics).	1	2	3	4	5

Q.11. To what extent do you think the following **guidelines** will successfully help in providing high quality collaboration between HEIs, businesses and research institutions, in the **check** phase of education? *Please circle the number best representing your opinion.*

Guidelines	Not at all				To a great extent
Evaluating the learning method and tools' effectiveness against the labour and research needs	1	2	3	4	5
Measuring and assessing training effectiveness as a result of conjoint activities (use of acquired competencies at work place)	1	2	3	4	5
Developing and continuously updating 'feedback loop' mechanisms between key actors within the KT	1	2	3	4	5
Engaging potential new stakeholders	1	2	3	4	5

ACT

Q.12. To what extent do you think the following is a **challenge** in **improving** the collaboration between HEIs, businesses and research institutions? *Please circle the number best representing your opinion.*

Challenges	Not at all				To a great extent
Periodically improving/updating academic offer based on evaluation results and new market needs	1	2	3	4	5

Q.13. To what extent do you think the following **guidelines** will successfully help in providing high quality collaboration between HEIs, businesses and research institutions, in the **act** phase of education? *Please circle the number best representing your opinion.*

Guidelines	Not at all				To a great extent
Reviewing learning programmes and academic activities in line with FRA-MELOG	1	2	3	4	5
Ensuring readiness for change within the institutions	1	2	3	4	5

Q14. Could you please write down 3 topics of Logistics and Supply Chain Management you consider to be most up-to-date when planning the KT?..

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Thank you for your cooperation!