



**CEDEFOP**

European Centre  
for the Development  
of Vocational Training



International  
Labour  
Office  
Geneva

# CARRYING OUT TRACER STUDIES

GUIDE TO ANTICIPATING AND MATCHING SKILLS AND JOBS VOLUME 6



***Europe Direct is a service to help you find answers  
to your questions about the European Union.***

**Freephone number (\*):**

**00 800 6 7 8 9 10 11**

(\* The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

More information on the European Union is available on the internet (<http://europa.eu>).

© European Training Foundation / European Centre for the Development of Vocational Training /  
International Labour Office, 2016

Reproduction is authorised provided the source is acknowledged.

The contents of this publication are the sole responsibility of the authors and do not necessarily reflect  
the views of the EU institutions or the International Labour Office.

Cover design: © Article 10

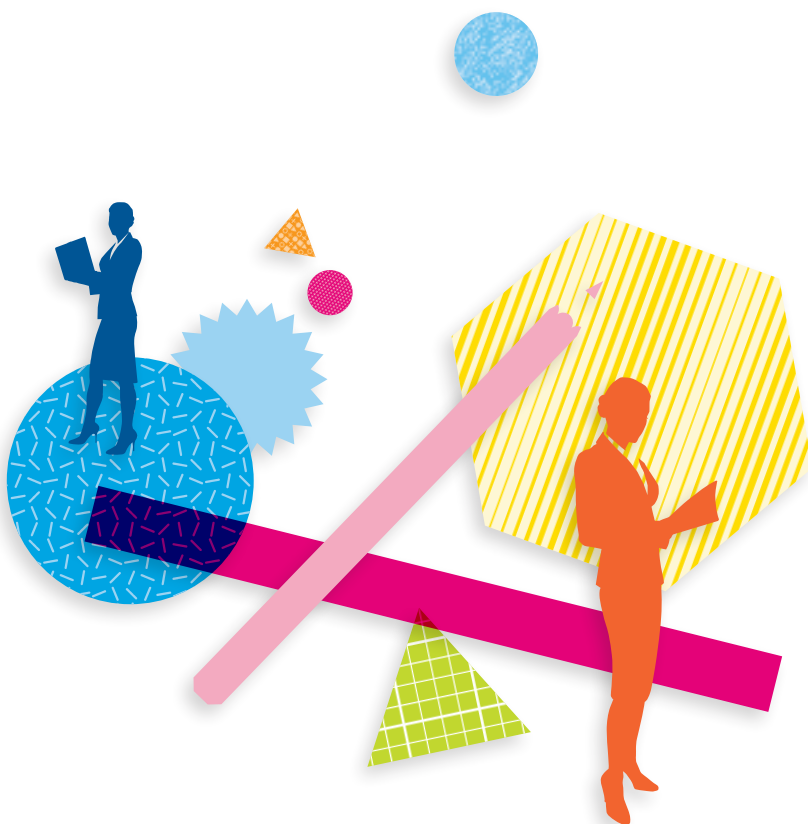
*Printed in Italy*

---

# CARRYING OUT TRACER STUDIES

**GUIDE TO ANTICIPATING AND MATCHING SKILLS AND JOBS VOLUME 6**

Harald Schomburg





---

# FOREWORD

In a context of dynamic and complex labour markets, gathering intelligence on current and future skill needs can support better matching of training and jobs, which is of paramount importance for every country in the world. In recent years, better understanding of labour market needs and skills matching have featured high on the policy agenda of many countries, driven by both rapid technological advances and global competition. Skills matching can also help reduce unemployment, particularly among young people. It helps build a better life for individuals by improving employability, social mobility and inclusion.

The European Union (EU) places great emphasis on skills anticipation and better matching. The Europe 2020 strategy and, in particular, the Agenda for new skills and jobs, recognise that anticipation and matching approaches and methods can help develop a skilled workforce with the right mix of skills in response to labour market needs, in a way that promotes job quality and lifelong learning. The EU Skills Panorama, launched in 2012, supports the effort to provide better data and intelligence on skill needs in the labour market.

The tripartite representation of International Labour Organization (ILO) Member States agreed that countries that have succeeded in linking skills to gains in productivity, employment and development have targeted skills development policy towards three main objectives:

- matching supply to current demand for skills;
- helping workers and enterprises adjust to change;
- building and sustaining competencies (1) for future labour market needs.

Such a strategy includes anticipating and delivering the skills that will be needed in the future. The ILO/G20 training strategy *A skilled workforce for strong, sustainable and balanced growth* (ILO, 2010) recognises anticipation of skill needs as one of the principal building blocks of effective skills development systems.

Skills matching is a complex and dynamic process involving multiple stakeholders making multiple decisions at different times: individuals and their families, as they make decisions regarding their own education and training; education, training and labour market policy makers, as they decide on the

configuration of education and training systems, employment policies and investments; training institutions, as they make decisions on the type and content of the training courses to be delivered; and employers, as they take decisions on how to train workers and utilise skills.

Jobs are changing rapidly and individuals are also changing their skill sets, either through education and training or through their work and life experience. Education and training systems, in particular, have a key role to play in ensuring that opportunities are provided for all individuals to develop their skills continually in a lifelong learning perspective, enabling them to adapt to rapidly changing labour market requirements and conditions.

Given the complexity and dynamics of the process, perfect matching between skills demand and supply is neither feasible (especially in rapidly changing labour

<sup>1</sup> The terms competency(ies) and competence(s), although slightly different in meaning, are used interchangeably throughout this publication.



markets and economies) nor necessary, given the fact that many people can do many different jobs and many jobs can be done by people with different skill sets. However, it is important for policy makers to be aware of the importance of reducing the risk of creating large skills gaps that undermine the employability of individuals and impede the productivity of enterprises and the growth of economies.

International experience suggests that a comprehensive labour market information system (LMIS) is the backbone of any education and employment strategy, but no single methodology can generate sufficient knowledge of labour markets to avoid or minimise skills mismatch. The right mix and complementarity of different methods is essential for a reliable and comprehensive overview of skills demand and matching.

For developing and transition countries, skills matching and anticipation is becoming an even more complex task given their particular socio-economic conditions, weak institutions, capacities and governance systems. Many developing countries have limited labour market information and more effort and investment is needed to build robust information systems. At the same time, even limited evidence can be better, and more efficiently used, with proper methodological tools and analyses.

To respond to these challenges, the European Training Foundation (ETF), the European Centre for the Development of Vocational Training (Cedefop) and the International Labour Office have joined forces and combined expertise and geographic coverage to develop a compendium of methodological guides on anticipation and matching of skills supply and demand.

- [Volume 1: how to use labour market information.](#)
- [Volume 2: how to develop skills foresights, scenarios and skills forecasts.](#)
- [Volume 3: what works at sector level.](#)
- [Volume 4: what is the role of employment service providers.](#)
- [Volume 5: how to develop and run an establishment skills survey.](#)
- [Volume 6: how to carry out tracer studies.](#)

The six guides complement each other. They include both qualitative and quantitative approaches, and advocate strong social dialogue and institutions conducive to better understanding the skills needs of tomorrow. They target professionals, policy makers, research commissioners, social partners and experts who need an overview of how different anticipation and matching methodologies can generate reliable labour market information and how information and evidence can be analysed and used for the development of policy interventions or adjustments in education and employment strategies.

The compendium brings together state-of-the-art international good practice and experience worldwide. The most common approaches used for skills matching and anticipation in different economic and country contexts are reviewed, and their potential and methodological shortcomings for generating reliable data and information are examined. They serve as reference material for readers to explain the scope, added value and limitations of diverse methodologies. The guides also provide insight into how the results of different methodologies can be analysed to provide recommendations and policy formulations.

Any feedback from readers and users of the guides is very welcome, particularly regarding how the next editions could be improved or made relevant to their circumstances and policy dilemmas, how they are used in different countries and contexts, including especially in bringing stakeholders together, and which topics could be added in the future to complement the current compendium.

Chris Evans-Klock,  
Chief of the Skills and Employability Branch,  
Employment Policy Department  
ILO – International Labour Office, Geneva

Madlen Serban,  
Director  
ETF – European Training Foundation

Joachim James Calleja,  
Director  
Cedefop – European Centre for the Development of  
Vocational Training

---

# ACKNOWLEDGMENTS

This guide on tracer studies was commissioned by the ETF to help stakeholders in education and training institutions to analyse the paths and outcomes of learners after completion of study programmes of all forms.

Harald Schomburg is the main author and the work reflects both his acknowledged expertise and also his belief in innovative approaches to tracer studies; these are based on high standards of research and on bottom-up partnerships of education and training institutions committed to self-improvement.

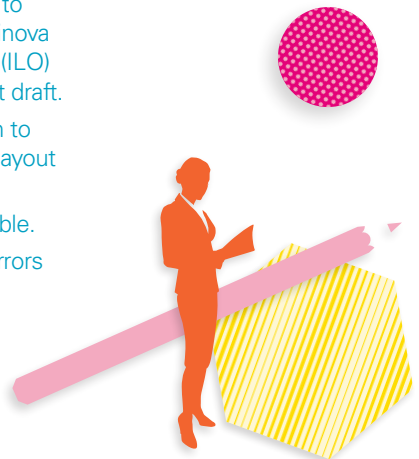
The conception and drafting of the guide benefited from the motivating context of the team of ETF colleagues who, from the start, supported the author with relevant examples and practical suggestions for contextualisation of the guide to scarcity of resources and capacities, and to limitations in information systems in many countries. This team learned much throughout this process and has committed to share the acquired experience and knowledge with colleagues inside and outside of ETF. Eduarda Castel-Branco (project coordinator), Christine Hemschemeier (country manager for Kyrgyzstan) and Eva Jansova (Statistical team ETF) are grateful for this opportunity for learning and cooperation in this project. Other ETF colleagues started using elements of the guide in the country projects, and their feedback provided additional insights: thanks also to Martino Rubal Maseda and Fillippo del Ninno.

The guide underwent several rounds of discussion and review, notably at the experts' validation meeting of 7 and 8 March 2014 (in Prague), whose many pertinent reflections have helped improving the first draft. Acknowledgements are expressed to Hans Rutjes (ROA), Olga Strieska-Ilina (ILO), Alena Zukersteinova (Cedefop), Aomar Ibourk, and Lizzi Feiler. Valentina Barucci (ILO) contributed detailed comments and suggestions for the first draft.

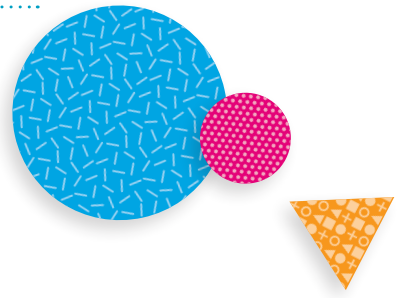
The Editorial Board of ETF is also thanked for its contribution to finalising the guide. Cedefop also contributed at this stage (layout and editing).

Without these inputs, this guide would not have been possible.

Responsibility for the views expressed and any remaining errors lies solely with the author.



# TABLE OF CONTENTS



|   |    |
|---|----|
| FOREWORD  | 5  |
| ACKNOWLEDGMENTS                                     | 7  |
| TABLE OF CONTENTS                                   | 8  |
| LIST OF FIGURES, TABLES AND BOXES                   | 12 |
| EXECUTIVE SUMMARY                                   | 15 |
| Overview of the content and use of this guide       | 15 |
| Use of tracer studies                               | 15 |
| 1. TRACER STUDIES AT FIRST GLANCE                   | 17 |
| 1.1. Overview                                       | 17 |
| 1.2. Objectives and potential readers of this guide | 17 |
| 1.3. What are tracer studies?                       | 18 |
| 1.4. Institutional tracer studies                   | 25 |
| 1.5. Tracer studies timing and target population    | 28 |
| 1.6. Survey sample size                             | 29 |
| 1.7. Tracer study feasibility                       | 29 |
| 1.8. Main tracer study objectives                   | 30 |
| 1.9. Stakeholder needs                              | 31 |
| 1.10. Study organisation and management             | 32 |
| 1.11. Costs of a tracer study                       | 32 |
| 1.12. Basic steps in a tracer study                 | 33 |
| 1.13. Training                                      | 33 |
| 1.14. Cooperation among tracer study researchers    | 34 |
| 1.15. Minimum requirements for tracer studies       | 34 |
| 2. KEY OBJECTIVES OF TRACER STUDIES                 | 37 |
| 2.1. Overview                                       | 37 |
| 2.2. Links between education and employment         | 37 |
| 2.3. Education programme relevance                  | 38 |
| 2.4. Outcome assessment in quality assurance        | 43 |
| 2.5. Career guidance and marketing                  | 44 |
| 2.6. Information for different stakeholders         | 44 |
| 2.7. Alumni office                                  | 44 |
| 2.8. Accreditation                                  | 45 |
| 3. TRACER STUDY DESIGN                              | 46 |
| 3.1. Overview                                       | 46 |
| 3.2. The design cycle                               | 46 |
| 3.3. Target population                              | 47 |
| 3.4. Time after graduation                          | 48 |
| 3.5. Data collection methods                        | 49 |
| 3.6. Cross-sectional versus panel study             | 51 |
| 3.7. Other design elements                          | 51 |
| 3.8. Regular tracer studies                         | 53 |

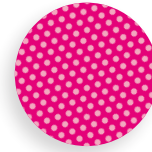




|   |    |
|---|----|
| 3.9. Requirements for institutional tracer studies  | 53 |
| 3.10. Data analysis   | 54 |
| 3.11. Costs of a tracer study   | 55 |
| 3.12. Timing and major work tasks of a tracer study   | 57 |
| 3.13. Design examples from different studies  | 58 |
| 4. QUESTIONNAIRE DEVELOPMENT  | 61 |
| 4.1. Overview   | 61 |
| 4.2. Standardised questionnaire   | 61 |
| 4.3. Adapting the specimen questionnaires   | 61 |
| 4.4. Length of the questionnaire  | 62 |
| 4.5. Data entry requirements  | 63 |
| 4.6. Open questions   | 63 |
| 4.7. Closed questions   | 63 |
| 4.8. Variables, codes and values  | 63 |
| 4.9. Answer scales and the level of measurement   | 64 |
| 4.10. Categorical or nominal scale question   | 64 |
| 4.11. Open-ended question   | 65 |
| 4.12. No answer   | 66 |
| 4.13. Only one answer   | 66 |
| 4.14. Multiple answers  | 66 |
| 4.15. Ordinal responses   | 68 |
| 4.16. How many scale points of an ordinal scale?  | 69 |
| 4.17. Verbalising the scale points  | 69 |
| 4.18. Metrical level of measurement   | 71 |
| 4.19. Rules for formulating questions   | 71 |
| 4.20. Question sequence   | 72 |
| 4.21. Questionnaire layout  | 72 |
| 4.22. Covering letter   | 72 |
| 4.23. Testing   | 73 |
| 5. QUESTIONNAIRE MODULES FOR A TRACER STUDY   | 74 |
| 5.1. Overview   | 74 |
| 5.2. Minimum version of a TVET/higher education tracer questionnaire  | 74 |
| 5.3. Module A: the course of studies at the TVET/higher education institution                                   | 76 |
| 5.4. Module B: internship and work experience during course of studies at the TVET/higher education institution | 78 |
| 5.5. Module C: evaluation of study conditions and study provisions at the TVET/higher education institution     | 78 |
| 5.6. Module D: competencies and satisfaction with study   | 79 |
| 5.7. Module E: after graduation from the TVET/higher education institution                                      | 80 |
| 5.8. Module F: employment and work  | 81 |
| 5.9. Module G: work requirements  | 82 |
| 5.10. Module H: relationship between study and employment   | 83 |



|   |     |
|---|-----|
| 5.11. Module I: work orientation and job satisfaction   | 84  |
| 5.12. Module J: vocational education/training before study at the TVET/higher education institution | 84  |
| 5.13. Module K: further education after study at the TVET/higher education institution              | 85  |
| 5.14. Module L: further vocational/professional training  | 86  |
| 5.15. Module M: demographic information   | 86  |
| 5.16. Module N: migration and regional mobility   | 87  |
| 5.17. Module O: further comments and recommendations  | 88  |
| 6. PREPARATION OF THE DATA COLLECTION PHASE   | 89  |
| 6.1. Overview   | 89  |
| 6.2. Management and organisation  | 89  |
| 6.3. Before survey launch   | 89  |
| 6.4. Address database   | 90  |
| 6.5. Tracer study web page  | 91  |
| 6.6. Examples of tracer study web pages   | 92  |
| 6.7. Flyer with survey information  | 96  |
| 6.8. Checklist for data collection  | 97  |
| 7. ACTIVITIES DURING THE DATA COLLECTION PHASE  | 98  |
| 7.1. Overview   | 98  |
| 7.2. Documentation of the field phase   | 98  |
| 7.3. Daily activities for handling paper questionnaires   | 98  |
| 7.4. Response statistics  | 99  |
| 7.5. Control of returned questionnaires   | 103 |
| 7.6. Reminder actions   | 104 |
| 7.7. Helpdesk   | 106 |
| 7.8. Daily backup/download of online data   | 106 |
| 7.9. Data entry of paper questionnaires   | 106 |
| 7.10. Measures for obtaining a high participation   | 106 |
| 7.11. Training of survey staff  | 106 |
| 7.12. The codebook  | 107 |
| 7.13. Recommendations and rules for coding and data cleaning  | 107 |
| 8. DATA ANALYSIS  | 109 |
| 8.1. Overview   | 109 |
| 8.2. Data analysis software   | 109 |
| 8.3. Data entry for paper questionnaires  | 109 |
| 8.4. Coding   | 110 |
| 8.5. Rules for names of questions and variables   | 110 |
| 8.6. Coding of open responses   | 112 |
| 8.7. Numerical data entry   | 113 |
| 8.8. Data definition with SPSS  | 114 |
| 8.9. Missing values   | 115 |

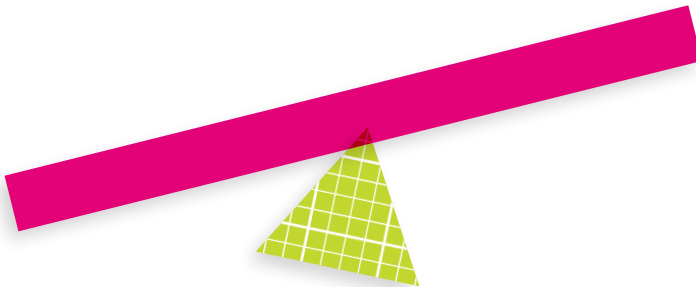


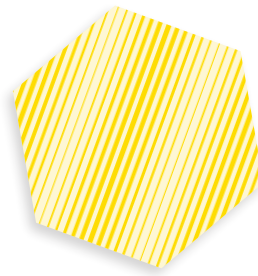
|  |     |
|--|-----|
| 8.10. Data modification  | 116 |
| 8.11. Simple data analysis: frequencies                                    | 116 |
| 8.12. Data correction with syntax  | 117 |
| 8.13. Further statistical analysis   | 117 |
| 9. PRESENTATION OF RESULTS   | 118 |
| 9.1. Overview  | 118 |
| 9.2. Key challenges of interpretation                                      | 118 |
| 9.3. Methods report  | 120 |
| 9.4. Report on results   | 120 |
| 9.5. Tables report   | 122 |
| 9.6. Interpretation of results and practical conclusions                   | 122 |
| 9.7. Tracer studies in international development cooperation projects      | 124 |
| 9.8. Misinterpretation of findings   | 126 |
| 9.9. Dissemination activities  | 127 |
| 10. SELF-EVALUATION OF STUDY QUALITY                                       | 128 |
| 10.1. Overview   | 128 |
| 10.2. Objectives of the tracer study                                       | 128 |
| 10.3. Address database   | 129 |
| 10.4. Quality of the questionnaire   | 129 |
| 10.5. Survey procedures  | 130 |
| 10.6. Data cleaning  | 130 |
| 10.7. Data analysis  | 131 |
| 10.8. Quality of reports   | 131 |
| 10.9. Dissemination activities   | 132 |
| ACRONYMS   | 133 |
| KEY TECHNICAL TERMS  | 134 |
| REFERENCES AND RESOURCES   | 136 |
| Weblinks   | 140 |
| LITERATURE   | 141 |
| Handbooks and guides   | 141 |
| Tracer studies   | 141 |
| Methodology of tracer studies  | 146 |
| Education and employment   | 147 |
| ANNEXES  | 150 |
| ANNEX 1. Minimum version of specimen questionnaire for a TVET tracer study | 151 |
| ANNEX 2. Questionnaire modules for a TVET tracer study                     | 169 |
| ANNEX 3. Tables report with questionnaire and codebook                     | 199 |
| ANNEX 4. Data definition (SPSS syntax)                                     | 271 |
| ANNEX 5. Building of new variables (SPSS syntax)                           | 290 |

# LIST OF FIGURES, TABLES AND BOXES

## Figures

|                   |  |            |
|-------------------|--|------------|
| <b>Figure 1.</b>  | Traditional national tracer studies  | <b>19</b>  |
| <b>Figure 2.</b>  | Objectives of institutional tracer studies   | <b>25</b>  |
| <b>Figure 3.</b>  | Three basic steps of a tracer study  | <b>33</b>  |
| <b>Figure 4.</b>  | Conceptual framework for tracer studies  | <b>40</b>  |
| <b>Figure 5.</b>  | Model for the analysis of the relationships between TVET/higher education education/training and employment and work | <b>41</b>  |
| <b>Figure 6.</b>  | The design cycle   | <b>47</b>  |
| <b>Figure 7.</b>  | Response rate of the KOAB survey 2009, by higher education institution and data collection method (%)                | <b>52</b>  |
| <b>Figure 8.</b>  | Example of an ordinal scale question   | <b>72</b>  |
| <b>Figure 9.</b>  | Verbalising the scale points   | <b>74</b>  |
| <b>Figure 10.</b> | Organisation of the German KOAB tracer studies at university level   | <b>94</b>  |
| <b>Figure 11.</b> | Tracer study web page of the University Göttingen: invitation letter of the president of the university              | <b>97</b>  |
| <b>Figure 12.</b> | Tracer study web page of the University Göttingen: information about the participating faculties                     | <b>98</b>  |
| <b>Figure 13.</b> | Tracer study web page of the University Göttingen: participating faculties   | <b>99</b>  |
| <b>Figure 14.</b> | TVET Vietnam tracer study  | <b>100</b> |
| <b>Figure 15.</b> | Example of a Flyer from the VALERA tracer study  | <b>101</b> |
| <b>Figure 16.</b> | Text element for the cover page of the paper questionnaire   | <b>104</b> |
| <b>Figure 17.</b> | Example of returned questionnaires by date (number)  | <b>109</b> |
| <b>Figure 18.</b> | Example of returned questionnaires by date (cumulative number)   | <b>110</b> |
| <b>Figure 19.</b> | Net return rate by date (cumulative %)   | <b>111</b> |
| <b>Figure 20.</b> | Schedule of invitations/contacts   | <b>113</b> |
| <b>Figure 21.</b> | General rules for checking the questionnaires  | <b>121</b> |
| <b>Figure 22.</b> | Example for text data entry  | <b>128</b> |





## Tables

|                  |   |           |
|------------------|---|-----------|
| <b>Table 1.</b>  | Data collection methods   | <b>51</b> |
| <b>Table 2.</b>  | Software requirements for a tracer study  | <b>57</b> |
| <b>Table 3.</b>  | Costs estimation for a tracer study for one TVET/higher education institution (target population = 500 graduates; expected return rate = 50%) | <b>59</b> |
| <b>Table 4.</b>  | Phases of a tracer study, major work tasks, and duration  | <b>60</b> |
| <b>Table 5.</b>  | Tracer study of TVET graduates in Armenia   | <b>61</b> |
| <b>Table 6.</b>  | Tracer studies of the University of Indonesia   | <b>61</b> |
| <b>Table 7.</b>  | Graduate and employer survey of the Faculty of Engineering at the University of Dar es Salaam, Tanzania                                       | <b>62</b> |
| <b>Table 8.</b>  | The KOAB network tracer studies in Germany  | <b>62</b> |
| <b>Table 9.</b>  | International tracer study Cheers   | <b>64</b> |
| <b>Table 10.</b> | Example of a standardised question  | <b>65</b> |
| <b>Table 11.</b> | Example of questions  | <b>66</b> |
| <b>Table 12.</b> | Example of coded answers  | <b>66</b> |
| <b>Table 13.</b> | Examples of an open question  | <b>67</b> |
| <b>Table 14.</b> | Examples of a closed question   | <b>67</b> |
| <b>Table 15.</b> | Explanation of variables, values, codes and columns   | <b>67</b> |
| <b>Table 16.</b> | Example for nominal or categorical level of measurement   | <b>68</b> |
| <b>Table 17.</b> | Example of a question with categorical responses (categorical or nominal scale)   | <b>69</b> |
| <b>Table 18.</b> | Example for multiple answers  | <b>71</b> |
| <b>Table 19.</b> | Example for metrical measurement  | <b>75</b> |
| <b>Table 20.</b> | Rules for formulating questions   | <b>75</b> |
| <b>Table 21.</b> | Number of questions and variables of the TVET/higher education tracer study specimen questionnaires   | <b>78</b> |
| <b>Table 22.</b> | Subjects of the minimum questionnaire   | <b>80</b> |
| <b>Table 23.</b> | Specimen questionnaire for Module A   | <b>81</b> |
| <b>Table 24.</b> | Subjects of Module A  | <b>82</b> |
| <b>Table 25.</b> | Specimen questionnaire for Module B   | <b>82</b> |
| <b>Table 26.</b> | Subjects of Module B  | <b>83</b> |
| <b>Table 27.</b> | Specimen questionnaire for Module C   | <b>83</b> |
| <b>Table 28.</b> | Subjects of Module C  | <b>83</b> |
| <b>Table 29.</b> | Specimen questionnaire for Module D   | <b>84</b> |
| <b>Table 30.</b> | Subjects of Module D  | <b>84</b> |
| <b>Table 31.</b> | Specimen questionnaire for Module E   | <b>85</b> |
| <b>Table 32.</b> | Subjects of Module E  | <b>85</b> |
| <b>Table 33.</b> | Specimen questionnaire for Module F   | <b>86</b> |
| <b>Table 34.</b> | Subjects of Module F  | <b>86</b> |
| <b>Table 35.</b> | Specimen questionnaire for Module G   | <b>87</b> |
| <b>Table 36.</b> | Subjects of Module G  | <b>87</b> |
| <b>Table 37.</b> | Specimen questionnaire for Module H   | <b>88</b> |
| <b>Table 38.</b> | Subjects of Module H  | <b>88</b> |
| <b>Table 39.</b> | Specimen questionnaire for Module I   | <b>89</b> |
| <b>Table 40.</b> | Subjects of Module I:   | <b>89</b> |
| <b>Table 41.</b> | Specimen questionnaire for Module J   | <b>89</b> |
| <b>Table 42.</b> | Subjects of Module J:   | <b>89</b> |

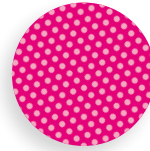


|                  |   |            |
|------------------|---|------------|
| <b>Table 43.</b> | Specimen questionnaire for Module K   | <b>90</b>  |
| <b>Table 44.</b> | Subjects of Module K  | <b>90</b>  |
| <b>Table 45.</b> | Specimen questionnaire for Module L   | <b>91</b>  |
| <b>Table 46.</b> | Subjects of Module L  | <b>91</b>  |
| <b>Table 47.</b> | Specimen questionnaire for Module M   | <b>92</b>  |
| <b>Table 48.</b> | Subjects of Module M  | <b>92</b>  |
| <b>Table 49.</b> | Specimen questionnaire for Module N   | <b>92</b>  |
| <b>Table 50.</b> | Subjects of Module N  | <b>92</b>  |
| <b>Table 51.</b> | Specimen questionnaire for Module O   | <b>93</b>  |
| <b>Table 52.</b> | Subjects of Module O  | <b>93</b>  |
| <b>Table 53.</b> | Recommended content of the address database   | <b>95</b>  |
| <b>Table 54.</b> | Example for calculation of the gross response rate                                  | <b>104</b> |
| <b>Table 55.</b> | Example for calculation of the net response rate                                    | <b>104</b> |
| <b>Table 56.</b> | Example of response rate for the XYZ tracer study                                   | <b>106</b> |
| <b>Table 57.</b> | Example of response statistics  | <b>106</b> |
| <b>Table 58.</b> | Characterisation of relationship between field of study and occupation by programme | <b>134</b> |



## Boxes

|                |  |            |
|----------------|--|------------|
| <b>Box 1.</b>  | Examples of TVET tracer studies  | <b>20</b>  |
| <b>Box 2.</b>  | Switzerland's regular higher education tracer study  | <b>22</b>  |
| <b>Box 3.</b>  | Germany's regular higher education tracer study conducted by HIS   | <b>22</b>  |
| <b>Box 4.</b>  | The Cheers study   | <b>23</b>  |
| <b>Box 5.</b>  | The Reflex study   | <b>23</b>  |
| <b>Box 6.</b>  | ILO school-to-work transition studies  | <b>24</b>  |
| <b>Box 7.</b>  | The Romanian tracer study  | <b>27</b>  |
| <b>Box 8.</b>  | Congrad: tracer studies in Serbia, Montenegro and Bosnia and Herzegovina   | <b>27</b>  |
| <b>Box 9.</b>  | Hungary: new network tracer study  | <b>28</b>  |
| <b>Box 10.</b> | Institutional tracer studies of the Technical University Berlin, Germany   | <b>38</b>  |
| <b>Box 11.</b> | ETF: Match, Innovation and learning project (TED)  | <b>43</b>  |
| <b>Box 12.</b> | Example of the selection of a target population  | <b>55</b>  |
| <b>Box 13.</b> | Nominal or categorical level of measurement  | <b>69</b>  |
| <b>Box 14.</b> | ISCO: International standard classification of occupations   | <b>126</b> |
| <b>Box 15.</b> | ISIC: International standard industrial classification of all economic activities (United Nations: New York, 2008) | <b>126</b> |
| <b>Box 16.</b> | NUTS: Nomenclature of territorial units for statistics   | <b>127</b> |
| <b>Box 17.</b> | SPSS syntax: labels and missing values   | <b>129</b> |



## Executive summary

### Overview of the content and use of this guide

Surveys of former participants of education programmes are often called tracer studies or graduate surveys. In some countries we also find other terms: alumni surveys (in the US), follow-up surveys or graduate career tracking system.

The tracer studies practitioner is the main focus of the guide. All chapters are relevant for this group of users, regardless of whether they are temporarily engaged with tracer studies as school teachers, university lecturers or administrative staff, or as professional research staff in research institutions, consulting firms or ministries. Managers of education institutions and other policy- and decision-makers who want background knowledge about tracer studies should only read selected chapters. Every chapter has an introduction with indications on its relative importance for the different users' categories. The guide is accompanied by five technical appendixes, useful for key users.

The overall methodological setting outlined in this guide can be applied, with the adjustments required by different available capacities and resources, to both settings: more centralised approaches of conducting tracer studies, which ministries and their agencies lead; and more bottom-up initiatives, with the education institution in the driving role.

This guide provides a step-by-step introduction to the wide range of different tracer study approaches and offers practical proposals for the key questions on how a tracer study should be designed: which graduates should be included; at what time after graduation should the tracer study be conducted; how can the graduates be contacted; what can be done if no valid addresses are available; which data collection methods should be used; what are the requirements and procedures of data analysis; and how can misinterpretations of findings be avoided?

The guide addresses the key problems of the usability of tracer studies: low response rates and high costs. For institutional tracer studies (those conducted by schools, colleges or universities) the guide provides practical solutions for achieving high response rate and

low cost. A wide range of examples from different countries and sectors of education and training have been used in this guide.

Data from institutional tracer studies, which usually try to obtain regular feedback from all graduates of a school/college/university about one to two years after graduation, allow linking the employment and work situation of graduates with their educational experiences on the level of study/training programmes. If institutional tracer studies are of sufficient quality, the data could also be used for a national monitoring system or for benchmark surveys in the context of education reform projects/programmes.

The guide is oriented towards high methodological standards and practical experiences in many countries. Although national and subject/sector specifics are relevant for every tracer study, existing world good practice is helpful to guide beginners and more experienced tracer studies projects alike. International standards and experiences are very relevant for the development of the research instrument, the tracer study questionnaire. Two questionnaire versions are provided with this guide: a minimal version which was designed to be used with very few adaptations/changes; and a module version, which is a toolbox of different topics and questions from which some elements could be selected. Both questionnaires use questions and standardised answers already tested and used in many surveys, so measurement quality (validity and reliability) is assured and important prerequisites of comparability of the survey results are met.

The guide emphasises the need for methodology reporting to support the credibility of any tracer study.

### Use of tracer studies

Tracer studies are widespread in higher education but also often employed in the VET (vocational education and training) / TVET (technical vocational education and training) <sup>(2)</sup> sector.

In many countries, conducting tracer studies is a formal requirement for the accreditation of study programmes. Programmes/projects seeking reform of TVET, which try to improve skill match and the

<sup>2</sup> TVET is an international term used to denote vocational education and training (VET). The two terms are used interchangeably throughout this publication.



transition from school to work, use data from tracer studies to measure their effectiveness. Education institutions are also increasingly interested in feedback from their former students to improve their study programmes, and to show new applicants how their graduates have managed the transition to employment.

Graduates are usually invited to provide feedback about their experiences on the labour market one to two years after graduation.

The information required from the graduates commonly includes:

- (a) duration of search for the first job;
- (b) methods of job search;
- (c) employment status at the time of the survey (about one to two years after graduation);
- (d) income level;
- (e) working time;
- (f) type of contract;
- (g) job title;
- (h) economic sector (private or public);
- (i) economic branch;
- (j) required knowledge and skills (competencies);
- (k) relationships between study and work (horizontal and vertical match);
- (l) further education and training;
- (m) regional and international mobility;
- (n) personal background characteristics.

Sometimes this core information from graduates is supplemented with aspects of educational experiences before and during the course of study/training like the

knowledge and skills gained, practical and work experience, evaluation of the study conditions and provisions. Such information is especially useful if the tracer study should allow conclusions about the relevance of elements of education/training (like the curriculum) to the labour market.

Tracer studies are not limited to simple descriptive information about the labour market success (the whereabouts) of the graduates. Results of tracer studies provide insights and contributions to explain the labour market situation of the graduates, and stakeholders and users are interested in which elements of the study conditions and provisions have effects on the employment outcomes. Context variables like the economic situation, the regional labour market and individual mobility and motivation, need to be taken into account to avoid misinterpretation of results.

Bottom-up partnership approaches have been useful in encouraging education institutions to engage in developing tracer study approaches, tailored to local conditions with limited resources, such as in the TVET sector, Kyrgyzstan. Building local initiatives into wider networks, combined with elements of technical-methodological support can spark highly motivated involvement from education institutions in tracer studies aimed at systematic analysis for self-improvement, and based on high standards of implementation of the research. Mutual trust among stakeholders is once more essential in growing such initiatives, and in freeing them from manipulation.

This guide offers users a range of examples and links to relevant international networks, which will, doubtlessly, encourage and motivate many readers to explore the lessons from tracer studies from around the world.



---

## Chapter 1.

### Tracer studies at first glance

#### 1.1. Overview

This chapter explains the key concepts of tracer studies and also summarises recommendations for institutional tracer studies:

- (a) several examples of national and international tracer studies are outlined;
- (b) the feedback for curriculum development and other aspects of improving the study conditions and provisions is very often the most important aspect of institutional tracer studies;
- (c) information about job search, employment conditions and work are taken as signals of the labour market chances of graduates from different study programmes;
- (d) it is recommended to include in regular tracer studies all graduates from one cohort of graduates (same year of graduation), which should be surveyed about one to two years after graduation.

This chapter is especially relevant for leaders and administrators of education institutions who might not be involved directly in a tracer study. They can learn about the production of knowledge from tracer studies, weaknesses and strengths. This knowledge is necessary to make meaningful decisions about the design of the study and practical solutions based on the results.

#### 1.2. Objectives and potential readers of this guide

##### 1.2.1. Relevance of education/training

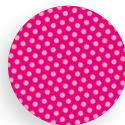
It is the aim of this guide to contribute to improving TVET, as well as higher education, by conducting high quality graduate surveys or tracer studies. Such studies should allow analysis of the impacts of study programmes and conditions at education institutions. The key objective is to identify the relevance of education/training for the transition to a job and further vocational career in the first years after graduating.

##### 1.2.2. New demand for tracer studies

Many countries are experiencing growing demand to introduce a system of tracer studies due to requirements of reaccreditations and quality management. Education institutions are often forced by law to implement regular tracer studies and demand from various donor agencies or stakeholders (such as the World Bank, EU, Asian Development Bank, and the national agencies) to get empirical evidence about the relevance of the education/training is also growing.

##### 1.2.3. Potential readers

Readers of the guide can find detailed instructions on how to design a tracer study, develop the questionnaire and do the data analysis, without being an expert in survey methodology. It is aimed mainly at people from education institutions who are going to introduce tracer





studies at their own institution (institutional tracer studies).

The guide will show how to:

- (a) plan and design a tracer study;
- (b) formulate the research questions/objectives;
- (c) develop the questionnaires;
- (d) collect and update the addresses of former students;
- (e) organise the data collection;
- (f) analyse the data and interpret the results.

The guide is also targeted at other user categories:

- (a) policy- and decision-makers (national, regional, sector levels) seeking to obtain information and data to inform decision-making;
- (b) research centres and expert networks involved/engaged in carrying out tracer studies for clients;
- (c) associations and networks with interest in evidence offered by tracer studies.

Experienced researchers can also learn from the guidelines how to apply their knowledge to the specifics of tracer studies.

Each chapter has in the beginning a rating of the importance of the content for the different potential readers.

#### **1.2.4. TVET and higher education tracer studies**

Institutional tracer studies are much more developed in higher education than in TVET. Few TVET tracer studies are published so most examples in this guide are taken from studies in higher education. We believe that tracer studies in the TVET sector can benefit considerably from experiences in higher education.

#### **1.2.5. Background of this guide**

The background to this guide is practical experience, gained by the author in many countries, in implementing tracer studies and training research staff.

The guide relies to a great extent on two earlier handbooks, also written with the goal of enabling people from higher education institutions to implement institutional tracer studies: Schomburg, 1995; 2003.

### **1.3. What are tracer studies?**

#### **1.3.1. Definition**

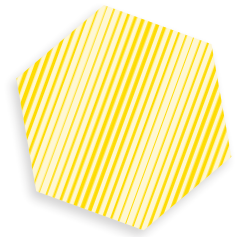
A tracer studies or graduate survey is a standardised survey (in written or oral form) of graduates from education institutions, which takes place some time after graduation or the end of the training. The subjects of a tracer study can be manifold, but common topics include questions on study progress, the transition to work, work entrance, job career, use of learned competencies, current occupation and bonds to the education institution (school, centre, university).

Various terms are used for graduate surveys:

- (a) graduate survey/study;
- (b) alumni survey/study;
- (c) graduate (career) tracking;
- (d) follow-up survey/study;
- (e) transition survey/study;
- (f) tracer survey/study;
- (g) methods of data collection.

Standardised surveys are usually conducted by means of a paper questionnaire or, more recently, online questionnaires. Telephone interviews are also





sometimes used, where the interviewer enters the answers simultaneously into an online form (CATI), for example at the Italian interuniversity consortium, Alma Laurea (see <https://www.almalaurea.it/en>).

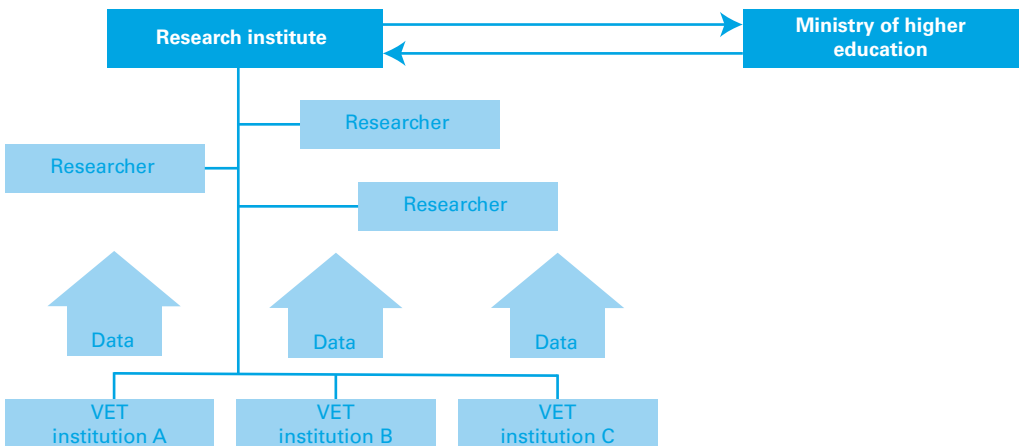
### 1.3.2. Traditional national tracer studies

The traditional type of tracer study is characterised by its centralised approach. A research institute (such as a private consultant or public research institute) conducts the survey according to the needs of a ministry (ministry of education or employment). The individual institutions (TVET or higher education) provide addresses but do not play an active role in the

research process apart from technical assistance. In some studies they may send out the invitation letters.

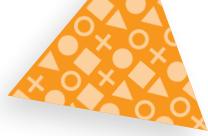
Such representative surveys in higher education have been carried out for about 30 years in some European countries (France, Germany, Italy, Norway, Switzerland). The main objectives are to inform ministries and other central bodies about the labour market success of the graduates. These studies use a national questionnaire (no adaptations for individual institutions) and they do not provide results for individual institutions (except in Switzerland). They can, however, be useful for analysis of skills mismatch at national level in combination with information from other data sources (see Volume 1, for further detail).

Figure 1. Traditional national tracer studies



Source: Schomburg, 2010.





### 1.3.3. Regular tracer studies

Many European countries have regular tracer studies: either annually (in the Netherlands, Switzerland, the UK, or Alma Laurea in Italy) or every three or four years (the higher education information system (HIS) in Germany, the Centre d'études et de recherches sur les qualifications (Céreq) in France, the national institute of statistics in Italy).

Some TVET tracer studies are conducted annually, for example in the Philippines by the Technical Education and Skills Development Authority (TESDA), in Morocco by the Département de la Formation Professionnelle, and in the Netherlands by the Research Centre for Education and the Labour Market (ROA), a research institute of the Maastricht University.

#### Box 1. Examples of TVET tracer studies

##### Armenia

*Tracer study of recent graduates from vocational education institutions in Kotayk and Ararat Marzes of Armenia* (ETF and CRRC, 2012).

*Involvement of 2010-11 preliminary and middle level of vocational education system graduates in the labour market* (Manukyan, 2012).

##### Botswana

*Tracer study on the employment outcomes of vocational training graduates* (Bolaane et al., 2010).

##### Ethiopia

Tracer study implementation in selected TVET institutions as a part of the GIZ project (Deutsche Gesellschaft für Internationale Zusammenarbeit): *Labour market-oriented education and training*, <http://www.giz.de/en/worldwide/18871.html>. No published report available.

##### Georgia

*Appendix: tracer study training of the capacity building report* (ETF, 2013).

*Tracer survey of graduates from vocational training centres, community colleges, and college level diploma programmes at higher education institutions* (Fretwell, 2012).

##### Germany

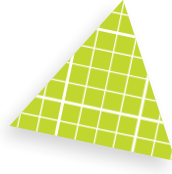
BIBB school-leaver surveys; 'BIBB has a strong tradition of survey-based research. It initiates and realises the collection of individual and firm-level data on crucial positions and transitions in the education and labour market system' <http://www.bibb.de/en/14512.php>

##### Indonesia

Implementation of tracer study systems in selected TVET institutions. GIZ project *Sustainable economic development through technical and vocational education and training (SED-TVET)* <http://www.giz.de/en/worldwide/16755.html>. No published report available

##### Lao PDR

National baseline tracer study by GTZ-HRDME (2005, 2007, 2009) (Lao-German programme on human resource development for market economy)



### **Kyrgyzstan**

ETF project with a strong component of the introduction of institutional tracer studies in the TVET sector. [http://www.etf.europa.eu/web.nsf/pages/Kyrgyzstan\\_EN](http://www.etf.europa.eu/web.nsf/pages/Kyrgyzstan_EN) and [http://www.etf.europa.eu/web.nsf/pages/EV\\_2014\\_Workshop\\_on\\_how\\_to\\_develop\\_a\\_tracer\\_study\\_for\\_VET\\_schools?opendocument](http://www.etf.europa.eu/web.nsf/pages/EV_2014_Workshop_on_how_to_develop_a_tracer_study_for_VET_schools?opendocument)

### **Morocco**

Since 1987: *études d'insertion et études de cheminement*.

The TVET Department annually carries out tracer studies of TVET graduates to capture the picture of their paths, nine months after graduation. To complete the analysis, the department periodically implements another survey targeted at collecting detailed information from specific cohorts for the developments over a period of three years. The latter surveys were carried out in 1987, 1990, 1993, 1996, 1998, 2000, 2002, 2004, 2006 et 2009.

*Étude de suivi de l'insertion des lauréats de la formation professionnelle de la promotion 2009: rapport de synthèse [Tracer study of graduates of vocational education and training of 2009]* (conducted every two years) (DFP, 2013).

### **Nepal**

*Tracer study of technical skills development training graduates, 2008/09*, (Development Vision-Nepal 2012).

*Tracer studies of employment fund supported training graduates of 2011* (Development Vision-Nepal, 2013).

### **Philippines**

*Impact evaluation study of TVET programmes: 2008* (TESDA, 2010).

### **Republic of South Sudan**

Tracer study implementation as a part of a JICA project (Japan International Cooperation Agency).

SAVOT: *the project for improvement of basic skills and vocational training (phase II)*. Tracer survey 2012, November 2012 [http://www.jica.go.jp/project/english/south\\_sudan/002/](http://www.jica.go.jp/project/english/south_sudan/002/)

### **Rwanda**

Tracer study implementation as a part of a JICA project: *Project for strengthening the capacity of Tumba college of technology*. JICA (2012).

*Findings from the TVET graduates database* (Mugabi, 2010).

### **The Netherlands**

Regular school leaver surveys in the Netherlands: 'the school leaver surveys are designed to function as a monitoring instrument for the transition from school to work, covering the full breadth of the Dutch education system. The statistics generated by these surveys contain information on labour market outcomes, competencies and subsequent study activities.' (ROA, *School leaver survey statistics*, [http://www.roa-maastricht.nl/?page\\_id=3727](http://www.roa-maastricht.nl/?page_id=3727))

### **Vietnam**

Tracer study implementation in selected TVET institutions as a part of a GIZ project: *Reform of technical and vocational education and training (TVET) in VietNam – System advisory services for technical and vocational education and training component*. <http://www.tvet-vietnam.org/index.php/en/news/40-general/270-vietnamese-german-cooperation-in-tvet-tracer-study-a-successfully-piloted-initiative>





## Box 2. Switzerland's regular higher education tracer study

- information for political authorities (education/employment sectors);
- benchmarking (system of indicators of Swiss higher education institutes);
- evaluation and information tool for higher education institutes;
- information for career/study counselling services.

Source: Witmer 2008.

## Box 3. Germany's regular higher education tracer study conducted by HIS

Since 1989 every fourth graduation age-group of first degree graduates was interviewed by the Higher Education Information System GmbH (HIS). 6 000 to 12 000 first degree graduates participated. The surveys take place about one year after graduation and are complemented by a survey five years after graduation. In single cases HIS has also conducted regional surveys (e.g. in 2001 state specific surveys in Brandenburg and North Rhine-Westphalia).

Because of the sample design (too small sample size for individual higher education institutions) these national surveys are not used for analyses on the level of individual higher education institutions or of study programmes in individual higher education institutions.

HIS changed its name in 2013 to DZHW-Deutsches Zentrum für Hochschul- und Wissenschaftsforschung GmbH (German Centre for Research on Higher Education and Science Studies) ([http://www.dzhw.eu/en/index\\_html](http://www.dzhw.eu/en/index_html)).

### 1.3.4. Different conceptions and objectives

Graduate surveys can have very different conceptions and objectives. Apart from internationally comparative surveys (such as the Cheers study coordinated by Incher-Kassel) and national surveys (in France, Germany, Italy, the Netherlands and Norway), which are normally the responsibility of a central research institute, there is a multitude of decentralised surveys of education/training institutions in many countries which are either designed as interdisciplinary at one education/training institution or are targeted at a single or a few departments or study programmes.

For more details about the design of tracer studies see Chapter 3

### 1.3.5. Examples of international tracer studies

Tracer studies which are designed to allow international comparison are very rare. The first European tracer study was the Cheers study, followed by the Reflex (and Hegesco) study. More recently, the International Labour Organization (ILO) school-to-work transition survey (SWTS) (?), which does not focus on graduates from tertiary education, allows interesting comparisons between countries. Basic information about these international studies is presented in Boxes 4 to 6.





#### Box 4. The Cheers study

In contrast to surveys specific only to single higher education institutions, the Cheers study (careers after higher education: a European research study) is a large-scale international survey, initiated and coordinated by Incher-Kassel from 1998 to 2001. More than 40 000 higher education graduates in Europe and Japan have contributed important information on study design by answering a questionnaire on the relationship between higher education training and work, three to four years after graduation. The Cheers survey was mainly financed by the EU in the framework of funding socioeconomic research (TSER). Participation included nine countries of the EU (Germany, Spain, France, Italy, the Netherlands, Austria, Finland, Sweden, the UK); the EFTA country Norway; one Central and Eastern European country (Czech Republic) and Japan as a country outside of Europe.

The survey was done through an extensive questionnaire (16 pages, about 600 variables), which touched many areas: study, course of study, assessment of study conditions, transition to work, qualification and usage of qualifications, relationship between study and work, working conditions (salary, work time, kind of contract), job satisfaction, further training, regional and international mobility, social background and further characteristics.

Major publication of the Cheers study: Schomburg and Teichler (2006); Teichler (2007).

#### Box 5. The Reflex study

In the year 2004 the Reflex project started as a continuation of the Cheers study, with some changed topics. It centred on a survey of about 30 000 higher education graduates in those countries that already participated in the Cheers survey, plus Belgium, Poland and Switzerland. There were also parallel surveys in Estonia, Russia and several Latin American countries (Proflex). The Reflex project was financed, among other sources, from funds of the 6th Framework Programme Research and Innovation (2002-06) of the EU as a specific targeted research project.

The Reflex project analysed developments in relations between higher education and work in Europe. It took on the challenges of effective higher education training, which are seen as increasingly important because of the development towards a knowledge society, and concentrates on three linked questions: what competencies do higher education graduates need to adequately fulfil work tasks in this knowledge society; what role do higher education institutions play in helping the graduates develop these competencies; what conflicts result from graduates, higher education institutions, employers and other agents trying to reach their own goals and how can these conflicts be solved?

The Reflex survey was methodically very similar to the Cheers survey in the choice of targeted graduates, though Reflex included graduates four to five years after graduating.

Major publication of the Reflex study: Allen and van der Velden (2011)



<sup>3</sup> ILO: *School-to-work transition survey*: [http://www.ilo.org/employment/areas/WCMS\\_140862/lang--en/index.htm](http://www.ilo.org/employment/areas/WCMS_140862/lang--en/index.htm)



## Box 6. ILO school-to-work transition studies

ILO has been conducting nationally representative school-to-work transition surveys (SWTSs) in developing and middle-income economies (28 target countries in total).

The Work4Youth project is a five-year partnership between ILO and the MasterCard Foundation. The project field of intervention is data collection and analysis oriented towards policy formulation. The main research focus of Work4Youth is the transitions of young people to the labour market. Evidence on the transition is collected through two rounds of school-to-work transition surveys (SWTSs) run in twenty-eight target countries. The data produced are perfectly comparable across countries and allow for the calculation of benchmarks, as well as for regional and global analyses.

The SWTS is an ILO research tool designed to collect fresh and nationally representative data focusing on the youth labour market and the transition of young people to the world of work. The data in itself is not unique, although it tends to be more comprehensive than a typical labour force survey. What is unique about the SWTS is the development of indicators that define the stages of transition and the quality of transition, and the application of 'decent work' as a concept to be integrated into the analytical framework built around the SWTS. The survey for young people is complemented by a second survey for enterprises. Together the two generate a large pool of data on the characteristics and labour market attachments of young people as well as on the enterprises that could absorb them.

The SWTS serves a number of purposes. First, it detects the individual characteristics of young people that determine labour market disadvantage. This, in turn, is instrumental to the development of policy response. Second, it identifies the features of youth labour demand, which help determine mismatches that can be addressed by policy interventions. Third, in countries where the LMIS is not developed, it serves as an instrument to generate reliable data for policy-making purposes. In countries with a reasonably developed LMIS, the survey helps to shed light on areas usually not captured by household-based surveys, such as youth conditions of work, wages and earnings, and engagement in the informal economy.

The first SWTS questionnaires were developed in 2003 by the ILO for structured surveys on the question of gender equality in youth employment. They were first implemented in Indonesia, Sri Lanka and Viet Nam to inform the preparation of youth national action plans. In 2004, the ILO developed the analytical framework underpinning the concept of transition to decent work and reshaped the data collection instruments. The new framework was applied between 2004 and 2006 to surveys in ten countries: Azerbaijan, China, Egypt, Islamic Republic of Iran, Jordan, Kosovo, Kyrgyzstan, Mongolia, Nepal and Syrian Arab Republic.

In 2011, the Work4Youth project took the survey to Eastern Europe, Latin America, South Pacific, and Sub-Saharan Africa, in addition to Asia, Central Asia, North Africa, and the Middle East. The project implements the surveys through partnerships with the national statistics office of each targeted country. The NSOs run the surveys with the technical support of ILO experts providing assistance throughout the implementation process. The information collected is used to produce a national report, which analyses survey findings.

The SWTS datasets and the project's research products are available on the Work4Youth website, <http://www.ilo.org/w4y>. (Text provided by Valentina Barucci, ILO)

Some national reports are already available: <http://www.ilo.org/employment/areas/youth-employment/work-for-youth/publications/national-reports/lang--en/index.htm> [accessed 3.10.2014].



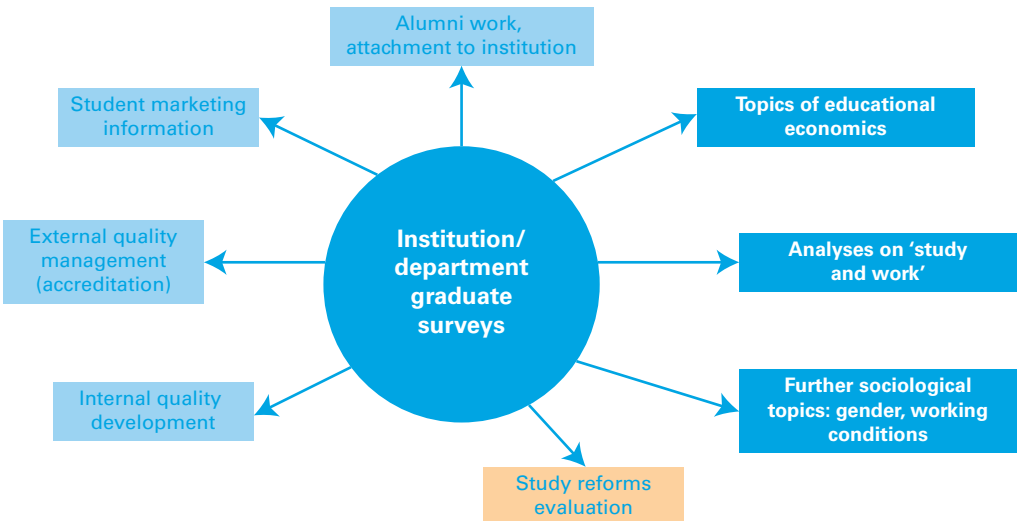
## 1.4. Institutional tracer studies

During the last 15 years a new type of tracer study emerged: more individual institutions of education are conducting tracer studies, sometimes in close cooperation with other institutions of education (network approach).

### 1.4.1. Objectives

Such institutional tracer studies could have many objectives (Figure 2) related to feedback for practical conclusions for improving the study/training programme or for research on the relationships between education and work. In the following figure the more practical objectives are indicated in yellow and the more theoretical ones in blue.

**Figure 2. Objectives of institutional tracer studies**



Source: Schomburg, 2008.

Feedback for curriculum development and other aspects of improving study conditions and provisions is often the most important aspect of such institutional tracer studies. Information about job search, employment conditions and work are taken as signals of the labour market chances of graduates from

different study programmes. Of special interest is the horizontal link between education and work. How are the work tasks of graduates related to their study programme and their competencies? Did they obtain the required competencies? To get meaningful answers to these questions requires also considering the





relevance of other factors besides education which might explain the 'employment outcome', such as aspects of the socio-biographic background (gender, region, age, work experience before study), study behaviour and labour market conditions.

Such information can also be used to inform potential students (and their parents) and can be useful for graduate job search (career guidance).

These institutional tracer studies are mainly relevant for individual institutions (reports for individual institutions, study programme level breakdown of results) and in some countries they are used also for a national monitor (in Germany, Hungary, Romania).

Many scientific publications use data collected in tracer studies. This data can be used for research publications and sometimes also in research work required for getting a doctoral degree.

For more details about the objectives of tracer studies see Chapters 3 and 5. Proposals for questionnaires are provided in Annex 1 and 2.

#### 1.4.2. Examples of institutional tracer studies

This new type of tracer studies can be found in Finland, France, Germany, Hungary, Indonesia, Italy, the Netherlands and Romania. Also the Proflex network in Latin America can be counted as of this type <sup>(4)</sup>. The Proflex surveys were carried out by institutions of higher education in Argentina, Bolivia, Brazil, Chile, Honduras, Colombia, Mexico, Panama, Puerto Rico and Uruguay.

Almost all institutions of higher education in Germany conduct regular tracer studies by themselves or are members of networks for conducting tracer studies. By far the largest network is KOAB <sup>(5)</sup> with about 80 institutions of higher education which every year invite all their graduates 1.5 years after graduation to participate in an online survey; about 70 000-150 000 graduates are invited and about 30 000 to 60 000 responses are received, giving a response rate of 40 to 50%.

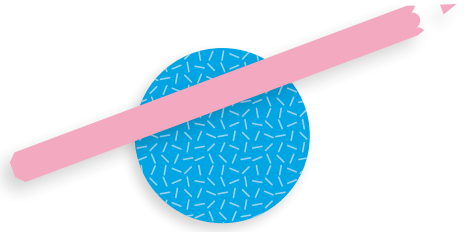
Boxes 7 and 9 provide basic information about the development of new institutional tracer study systems in Romania, Serbia, Montenegro and Bosnia and Herzegovina.

Further examples of tracer studies are provided in Chapter 3



<sup>4</sup> Proflex: *El profesional flexible en la sociedad del conocimiento [the flexible professional in the knowledge society]*: <http://www.encuesta-proflex.org/> [accessed 3.10.2014].

<sup>5</sup> KOAB: *Das Kooperationsprojekt Absolventenstudien [the graduate survey cooperation project]*: <http://koab.uni-kassel.de/en/koab.html> [accessed 3.10.2014].



### Box 7. The Romanian tracer study

#### The first phase

- addressed graduates that finished their studies in 2005 and 2009;
- 55 public and private universities participated;
- during four contact stages, from November 2010 to March 2011, each university invited its graduates to fill in the questionnaire;
- one invitation and three reminders were sent by mail and e-mail;
- the filling in of the questionnaire ended on 31 March 2011, with 39 293 respondents.

#### The second phase

- addressed graduates who finished their studies in 2006 and 2010;
- 42 public and private universities participated, using the updated questionnaire;
- it had five contact stages, between 2 April 2012 and 30 April 2012;
- one invitation and four reminders were sent by e-mail and only optionally by mail;
- new contact methods were used: short message invitations sent to graduates with a valid mobile number, online self-registration form available on the project's website;
- the contact process was implemented with the help of an online platform, developed by UEFISCDI <sup>(\*)</sup>, which helped with automatic sending of e-mails and response centralisation;
- the filling in of the questionnaire ended on June 2012, with 9 294 respondents.

(\*) The executive unit for financing higher education, research, development and innovation

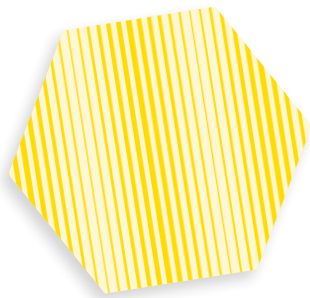
Source: University graduates and labour market: Romanian tracer study: <http://www.absolvent-univ.ro> [accessed 3.10.2014].

### Box 8. Congrad: tracer studies in Serbia, Montenegro and Bosnia and Herzegovina

'The Congrad project's wider objective is to enable higher education institutions (HEIs) in Serbia, Montenegro and Bosnia and Herzegovina to continuously conduct graduate surveys for the purpose of enhancing study offerings and facilitating permanent modernisation processes.

Congrad is expected to contribute to the improvement of institutional self-evaluation processes by collecting systematic and reliable information on the links between study offerings and subsequent employment of graduates, as well as enable the evidence-based evaluation of higher education reforms and curricular changes in the last decade. Taking into account previous study conditions and the occupational career of graduates, Congrad aims for a general insight in country specific conditions of the transition from higher education to labour market, and shall enable partner country HEIs to make evidence-based strategic decisions. In more specific terms, Congrad is expected to result in the implementation of a systematic data collection system about alumni at partner countries' HEIs.'

Source: Congrad:project description: <http://www.congrad.org/project-description/> [accessed 3.10.2014].



## Box 9. Hungary: new network tracer study

### External motives to graduate career tracking system (GCTS)

- act on higher education: 'higher education institutions shall fulfil the tasks in career tracking, in which they shall monitor the labour market situation of graduates',
- institutional accreditation
- three-year financing agreement with government
- external application sources

### Internal motives to GCTS

- training and service development: labour market feedback;
- marketing: competitive advantage in entrance exam competition;
- part of quality assurance;
- information for career orientation (what is the value of the degree?);
- alumni programmes, labour market connections (sponsorship opportunities later).

Source: Educatio Public Services non-profit LLC

## 1.5. Tracer studies timing and target population

Most tracer studies focus on just one homogenous group of students/trainees (a 'cohort') who finished their study at the same time point (generation or graduation cohort, for example graduates of the year 2013 or generation 2013).

Regular tracer studies should include only one cohort.

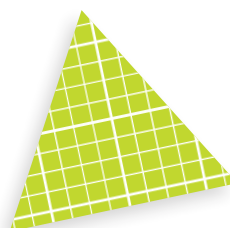
For more details see Chapter 3

Closely related to the question of the cohorts of graduates to be included in the study is that of the

timing of the survey with respect to graduation. How much time should pass until the graduates/trainees are invited to participate in the study?

Most regular tracer studies in higher education are conducted between one year and three years after graduation (Costa Rica, France, Germany, Hungary, Indonesia, Italy, Switzerland). The 'first destination surveys' in the UK and Australia are exceptional, being conducted about six months after graduation.

There are different considerations in deciding the best time after graduation for the study. Six months after graduation may be considered too early but it can also be argued that a tracer study should be done only a few months after graduation because this provides rapid feedback and the graduates are easier to contact. Both arguments can be supported but can also be





criticised in relation to the objectives of the tracer study. If the results are to be helpful in improving study programmes it is necessary for most graduates to have managed the transition to employment and had some relevant work experience. In poor bad labour market conditions it makes no sense to conduct the survey too early when most graduates are still looking for their first job.

Regular tracer studies should include only one cohort which will be asked to participate about one to two years after graduation.  
For more details see Chapter 3

## 1.6. Survey sample size

All graduates of one cohort should be invited.

In general the target group (or target population) in tracer studies of individual subject areas of a single institution of education is the total population of graduates; the aim is to achieve the participation of nearly all graduates in the survey.

Institutional tracer studies need participation from as many graduates as possible from the different study programmes. Not all graduates invited will participate; the response rate is usually far below 100%. Therefore, in every tracer study the participants are just a sample of all graduates. Since most institutional tracer studies are looking for results to improve study programme curricula, they need results across different study programmes; general results at the institution level are usually not relevant for the specifics of individual study programmes.

As in most institutional tracer studies the number of graduates is relatively low, sampling is not necessary. Even if the participation of all graduates of an individual cohort is the goal, the response may sometimes be below 25%.

Institutional tracer studies should include all graduates of one cohort which will be asked to participate about one to two years after graduation.  
For more details see Chapter 3

## 1.7. Tracer study feasibility

The feasibility of tracer studies depends on two main factors:

- (a) availability of valid addresses;
- (b) willingness of graduates to participate (response rate).

A low response rate can bring doubts about potential bias in the participating graduates. If they are not representative of the total population, the usability of the results is also in question.

Obtaining addresses can be difficult and time-consuming task. Often it is not possible to get the actual addresses out of an updated register (as it is possible in Norway, Finland and Sweden).

Several approaches must be considered:

- (a) sometimes it is necessary to collect the address information from units faculties or departments within an education institution;
- (b) manual entry of addresses not stored electronically;
- (c) use addresses for parents of the graduates (usually held in registration records);
- (d) involve the media in publicising the tracer study;



- (e) alumni associations might provide addresses;
- (f) employers (such as schools and universities and other known employer of graduates) might provide addresses;
- (g) the 'snowball technique' asks graduates for addresses of friends who also graduated with them. Facebook and other social networks can assist.

Addresses held for graduates become invalid as they move to a different location for work or training; the more time has passed from time of graduation, the more the validity of addresses is in question. A lot of strategies are possible for updating the addresses. For example all graduates of the target population can be called by students to announce the upcoming tracer study and to get the valid e-mail address.

Very often low response rates of less than 30% are reported from tracer studies, though some achieve 50% and more. It is almost impossible to compare the response rate between different studies, because design elements are very different.

A key factor in achieving a high response rate is the number of reminder actions. Usually up to two reminders are sent in mail surveys, meaning that those who did not answer were contacted three times.

Other factors which might contribute to the response rate include:

- (a) the relevance of the questionnaire;
- (b) the quality and layout of the questionnaire;
- (c) the kind and content of the invitation letters.

Graduates should be contacted at least three times (two reminders).  
For more details see Chapter 7

## 1.8. Main tracer study objectives

### 1.8.1. Key research questions/objectives

Almost all tracer studies should provide answers to the following questions:

- (a) what happens to graduates after leaving the education/training institution?
- (b) were they able to get paid employment in an acceptable time?
- (c) do they use the skills and knowledge they have gained in the education/training institution? If not, what are the reasons?
- (d) what are the skills and competencies demanded in the labour market?

Such questions are usually covered by the two main objectives of tracer studies:

- (a) to measure the employability of graduates (labour market information). Key related topics:
  - (i) employment situation;
  - (ii) time to get the first employment;
  - (iii) duration of job search;
  - (iv) salary/income;
  - (v) position;
  - (vi) economic sector;
  - (vii) main work tasks/duties;
  - (viii) working time;
  - (ix) job satisfaction;
  - (x) use of competencies and required competencies;
  - (xi) usefulness of study/training programme.
- (b) to get feedback from graduates to improve the study programme (retrospective evaluation). Key related topics:
  - (i) further education and training (education pathways);
  - (ii) needs for further education and training;





- (iii) evaluation of the study/training programme;
- (iv) strength and weaknesses of the study/training programme;
- (v) proposals for improvements.

The potential of tracer studies, in comparison to education or job market statistics, lies in the combination of objective and subjective data and in the flexibility to cover the topics relevant for individual education/training institutes.

The content of tracer studies (the questionnaire) can be flexible and easily customised for the specific needs of individual institutions or study/training programmes.

Besides the purely quantitative criteria of job success (salary, position, work conditions) there might be also questions about individual motivation, satisfaction and reasoning. Studies/graduate surveys can draw a picture of individual study careers, motivations of choosing a study programme, and the transition to work and job career.

Graduate self-assessment allows for statements about the use of knowledge gained during studies, matching with expectations in the job, and the adequacy of the employment. They can also retrospectively rate the conditions in their study programme and at their education/training institution.

A broad range of aspects of employment, work and prior learning experiences can be included in a tracer study, not just simple descriptive findings. Tracer studies might also explain the causes of professional success and analyse the impact of various features of TVET institutions (Figure 5).

For more details about the objectives of tracer studies see Chapters 2 and 4.



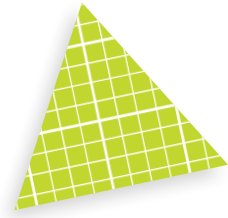
## 1.9. Stakeholder needs

Although different stakeholders might have their own specific needs regarding the information to be collected from graduates it should be possible to reach agreement on the relevance of core questions (see the example in Annex 1). All stakeholders must be interested in obtaining high quality data and so should support necessary efforts. But not all stakeholders have the same information needs and compromise may be required.

Career guidance and student counselling are areas which may use objective information on the whereabouts of graduates. Information about the time needed to get a first job after graduation and employment conditions are useful to those interested in starting study or are current students.

People engaged curriculum development might be also interested in these objective data but they typically are looking too for information which enables them to decide which improvements should be undertaken. An evaluation of study conditions and study provision by graduates, as well as the information about the use of competencies, are often seen as very helpful.

A mutual agreement about the objectives of the tracer study requires trust among stakeholders that the results are not misused. For example, in some countries the results are not published in a way which would allow identifying individual institutions, to avoid misleading rankings. Since interpretation of the results requires the use of context information, such as educational background, motives of students and the situation in the regional labour market, publication just of pure data about the employment situation of graduates could be used in a wrong way.



### 1.10. Study organisation and management

Institutional tracer studies often have the following characteristics:

- (a) staff from education institutions play a key role in the development of all survey tasks;
- (b) staff from educational institutions usually need training in survey methodology and instrument development;
- (c) the questionnaire should be relevant for the individual institution;
- (d) all graduates (no sample) of one year are invited one to two years after graduation to participate in the survey.

The key challenges are related to:

- (a) establishing a database with contact details of valid (updated) graduate addresses;
- (b) using appropriate methods to get a high response rate;
- (c) manipulating and analysing the data in a way that allows conclusions related to the research questions.
- (d) A tracer study team is necessary with the following functions:
  - (e) project coordinator (education expert; contact person);
  - (f) team members with the following responsibilities: project management; IT (online questionnaire); report writing and presentations; statistical analysis;
  - (g) external partners.

It has to be decided in which unit of the TVET/higher education institution the tracer study will be located.

Looking to international experiences a wide variety of organisation solutions is possible.

In universities in Indonesia, the hosts of the tracer studies are found mainly within career development centres. This is also the case in Hungary, while in Germany most tracer studies are done in the context of units responsible for quality management/assurance. Since these units also regularly conduct other surveys (such as course evaluation, student and academic staff surveys) they are a kind of institutional research centres. In some universities, research staff from the faculty of social sciences or education cooperate with these units. Sometimes offices for alumni affairs are also responsible for tracer studies.

Many management tasks occur in every institutional tracer study:

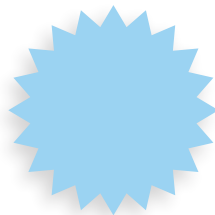
- (a) work and responsibility distribution;
- (b) team communication/meetings;
- (c) work flow control;
- (d) schedule.

Regular meetings of the team with control of the work done and future planning is a very important aspect of a successful tracer study.

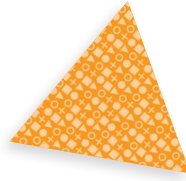
From the beginning, meetings should take place every week at a fixed date and time. Minutes of these meetings are helpful and should be checked and formally agreed by the team members in the next meeting.

### 1.11. Costs of a tracer study

The costs of tracer studies vary. National representative tracer studies in the higher education sector in Germany (sample size about 60 000







graduates; returned questionnaires about 10 000) are very expensive (about one million USD) because a mailed paper questionnaire with reminders was used and staff costs are included.

Institutional tracer studies can be done with very low budget: as little as USD 200 are required to update the addresses of 500 graduates. If only employees of the TVET/higher education institutions are involved in the tracer study then no other costs exist.

For more details about the costs of tracer studies see Section 3.11.

### 1.12. Basic steps in a tracer study

A tracer study can be performed within 12 months.

In general, implementation involves the following three steps which are described in detail in this guide:

**Figure 3. Three basic steps of a tracer study**

| Concept and instrument development;<br>Preparation of data collection | Data collection with reminder actions | Data analysis and report writing;<br>dissemination activities; actions |
|---|---------------------------------------|--|
| Four months   | Four months                           | Four months  |
| Chapters 3 to 6   | Chapter 7 and 8                       | Chapter 9 and 10   |

For each step of the survey this guide provides instructions, advice, recommendations, and rules which will offer significant help to conduct high quality survey.

### 1.13. Training

Institutional tracer studies usually require training of people from the education institutions in all phases of the study. This guide can be used as training material because it should enable the user to:


- (a) plan and design a tracer study;
- (b) formulate the research questions/objectives;
- (c) develop the questionnaires;

(d) collect and update the addresses of former students;

(e) organise the data collection;

(f) analyse the data and interpret the results.

The participating Universities and *Fachhochschulen* of the German tracer study network (KOAB) can send members of their individual tracer study team to four or five training workshops provided by Incher-Kassel regularly. Every year all network members also participate in a compulsory network conference where the key issues of project development (such as change of the used questionnaire) are discussed and decided.



Institutional tracer studies need a process of capacity building at every individual institution until they can be done successfully with high quality.

The training should cover all phases of the tracer study:

- (a) the concept of institutional tracer studies (kick-off);
- (b) questionnaire development;
- (c) preparation of the field phase;
- (d) data collection and method report;
- (e) data analysis and report writing;
- (f) dissemination activities.

Trainers should have a broad theoretical and methodological background as social scientists, but with special expertise in education research. They must have practical experiences in tracer studies including writing reports on results. Usually they should have published works in the area of the relationships between education and work.

#### **1.14. Cooperation among tracer study researchers**

The Cheers and Reflex surveys show that through cooperation and common learning processes it is possible to overcome the idiosyncrasies of single researchers in favour of a common concept that proves fruitful for a multitude of issues. Even though the cultural and disciplinary background of the about 40 to 50 graduate researchers who cooperate in the international surveys is very diverse, together they developed a questionnaire, and, therefore, a consensus on the relevance of theories and methods was reached.


The German KOAB network, the Hungarian tracer studies and the higher education studies in Indonesia

can be regarded as positive examples of fruitful cooperation among individual institutions.

These positive experiences can encourage trying to reach a common understanding of tracer studies/graduate surveys for TVET/higher education institutions through cooperation of graduate researchers as well. This would take a burden off the individual education/training institutions which need to conduct cost-efficient and high-quality graduate surveys. The possibilities of result comparison would also be dramatically raised through standardisation and with that the possible uses of benchmarking as a means of introducing methods of quality management.

#### **1.15. Minimum requirements for tracer studies**

This guide was developed with the objective of helping the reader conduct a high quality tracer study relevant for improvement in TVET/higher education. Such a study often requires the persons charged with the conduct of the survey, data analysis and report writing to have specific competencies which do not exist at the institutional level. Practical experience of quantitative surveys must be obtained where it does not exist, so development of a system of regular institutional tracer studies should be organised as a learning process; this is the key minimum requirement. As long as the persons responsible for the study are motivated to improve continuously their knowledge and abilities, in the relationship between education and work and methodology of tracer studies, high quality results can be expected which can lead to improvements. Institutions must acknowledge this work and support it with sufficient working time and some other resources.



On average 20% of the regular working time (about eight hours per week) of the key persons responsible for the tracer study should be allocated to the study, including time for individual learning. This amount of time is needed for the duration of the study, which is about one year; the phase of the study will determine if the time is really needed or more time must be allocated.

All graduates who graduated one to two years ago should be invited to participate in the tracer study. Those graduates are often easy to access and might have already gained relevant work experience. It is not recommended to focus the survey on graduates who are still in the process of job search, which might be the case for around six months after graduation.

Annex 1 provides a minimum version of the specimen questionnaire for a TVET/higher education tracer study; this can be used as the starting point for an own questionnaire, with adaptations of the specimen questionnaire according to the specifics of the study/training programme but no major changes. The questionnaire is ready to use because the questions have been tested and used already in many studies.

The length of the questionnaire is not directly linked to the return rate. A very short questionnaire provides only very limited information about the labour market experiences of the graduates, but the efforts to achieve a sufficient response rate are almost the same as in the case of a longer and richer questionnaire.

It is recommended to use a paper questionnaire, rather than online, because the paper questionnaire has more flexibility. It can be delivered and collected by post or by persons. For instance, graduates might be invited to come to the institution for a certain event and the questionnaires can be distributed and collected there.

Any tracer study requires a database (it can be an Excel file) with name and addresses of the graduates. Verification and updating of the data should be done but it is not necessary at the start of the exercise to have verified and updated all addresses; the survey can be launched at any time with existing addresses. It should be documented in the report what kind of addresses were used. It is usually not recommended to use only the addresses of the alumni club, because they are often highly selective.

Often the response rate is used a key indicator for the quality of a survey. Since the response rate depends very much on the kind of efforts undertaken by the researchers and not on the inherent motivation of the graduate it is recommended to use at least one reminder, but a minimum required response rate for tracer study cannot be stated.

It is recommended to use a professional tool such as SPSS (statistical package for the social sciences) or R for data entry and data analysis, but in the beginning Excel might also be used.

R is a very powerful freeware (open source) for statistical analysis of data and has developed quickly during the last years. For institutions with limited financial resources it would be a good choice to have staff with knowledge and experiences of R for any kind of statistical analysis.

In reporting the findings attention should, from the beginning, be on two aspects: report on the methods and interpretation of findings.

The methods report should inform the reader about the:

- (a) objectives of the tracer study;
- (b) questionnaire;



- (c) target population;
- (d) address database;
- (e) activities to collect the questionnaires;
- (f) response rate;
- (g) representativeness of the participating graduates.

Interpretation of findings should be given, at least for questions related to the key research questions.



---

## Chapter 2.

### Key objectives of tracer studies

#### 2.1. Overview

The objectives of tracer studies are very different but some common elements can be identified. Some tracer studies produce only simple descriptive findings about the employment situation of graduates while others try to explain the employment situation by analysing the links between employment and education.

Tracer studies of individual TVET institutions (or individual study programme in the TVET institution) can produce valuable information for a broad range of actions/functions of TVET institutions.

A tracer study should:

- (a) be valuable for a broad range of stakeholders;
- (b) cover a broad range of aspects of employment and work;
- (c) give some explanations of the causes of professional success/employment outcomes;
- (d) analyse the impact of various features of education to get empirical based hints for improvement.

The study should be designed in a way that ensures feedback which is motivating and is valuable for considering improvements in TVET/higher education institutions.

These are the typical main objectives but other objectives might also be considered.

#### 2.2. Links between education and employment

Surveys of graduates from institutions of education and training, here called tracer studies or graduate surveys (otherwise also named alumni surveys) are the most valuable single type of survey for collecting systematic and reliable information on the links between study and subsequent employment and work.

Tracer studies provide information on the whereabouts of graduates sometime after the award of the degree, and they can link this with sociobiographic and study descriptors (gender, age, field of study, institution awarding the degree).

Graduate surveys enable illustration of features of the career 'success' of graduates in general, as well as giving some indication of what students from what sectors of higher education fare better subsequently than others.

Tracer studies could provide feedback for improvements in TVET and higher education. This is the main objective of such studies in many countries.





### Box 10. Institutional tracer studies of the Technical University Berlin, Germany

'The alumni's feedback is an important source for the Technische Universität Berlin for adapting study terms to the needs of our students and easing our alumni's' transition into professional life. The information we gain provides various approaches for the development of our study programmes and the improvement of our service centres. Based on the results of the survey, we can specifically expand the range of key qualifications we offer. Findings on the progress of studies and career paths will be used by the Career Service and study consulting.'<sup>(a)</sup>

'The purpose of this graduate survey is to gather important information about the transition to Master courses and/or the professional world, as well as to collect data about the current career situation of graduates in the first years following their Bachelor or Master studies. How do you evaluate the time of your studies in retrospective? And today: are you employed or a PhD student, on parental leave, etc.? Your experiences will contribute to the improvement of the quality of studies. To get meaningful results, every contribution is important.'<sup>(b)</sup>

<sup>(a)</sup> Technische Universität Berlin: Absolventenbefragungen: *information on the graduate survey*; [http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/information\\_on\\_the\\_graduate\\_survey/parameter/en/](http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/information_on_the_graduate_survey/parameter/en/) [accessed 6.10.2014].

<sup>(b)</sup> Technische Universität Berlin: Absolventenbefragungen: *Objectives of the graduate survey*; [http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/objectives\\_of\\_the\\_graduate\\_survey/parameter/en/](http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/objectives_of_the_graduate_survey/parameter/en/) [accessed 6.10.2014].

### 2.3. Education programme relevance

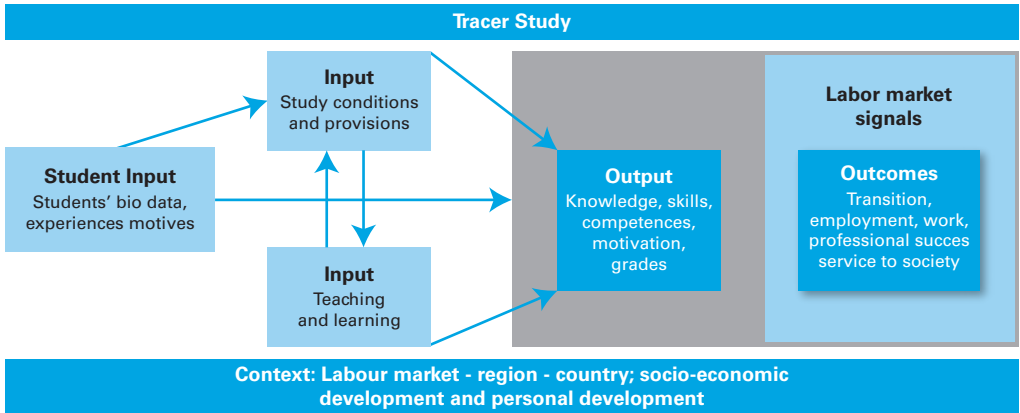
Several aspects of employment and work, as well as prior learning experiences, might be included in tracer studies to analyse the links between education and work.

The survey can cover a broad range employment and work outcomes:

- (a) employment status;
- (b) salary;
- (c) working time;
- (d) type of contract (temporary/unlimited);
- (e) typical job assignments;
- (f) job requirements;
- (g) job satisfaction;
- (h) utilisation of knowledge;
- (i) links between levels of education attainment and position.



**Figure 4. Conceptual framework for tracer studies**



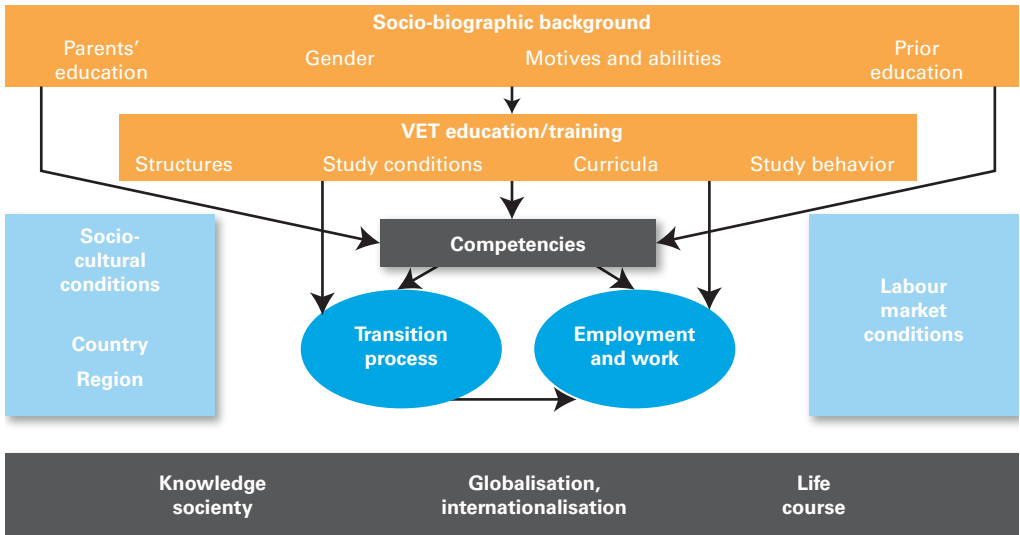
Source: Schomburg, 2003.

Findings are not limited to simple descriptive points: studies can address many topics which can be 'causally' linked with each other:

- (a) individual study preconditions (student input) such as gender, parental and regional background, motivations and abilities;
- (b) resources, study conditions and study provisions (input such as curriculum, teacher motivations and abilities);
- (c) processes of teaching and learning (process),
- (d) development of competencies (output);
- (e) the transition from education to work and job career (outcome) (see Figure 5 and Figure 6).



**Figure 5. Model for the analysis of the relationships between TVET/higher education education/training and employment and work**



Source: Schomburg, 2003.

A broad range of criteria of professional success (benefits of education) are needed: a 'match' between the demands of the labour market and the society at large would be too narrowly viewed, if links between the field of study and the area of work were the only information base.

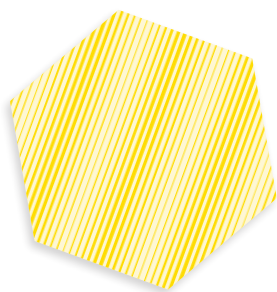
The tracer study should allow to measure aspects of:

(a) horizontal match (relevance of field of study for the work tasks; extent of use of knowledge and skills acquired during study);

(b) vertical match (appropriate position regarding the level of education; salary level and other employment conditions).

For more details on operationalising the links between education and work see Chapter 5 and the questionnaires in Annexes 1 and 2.



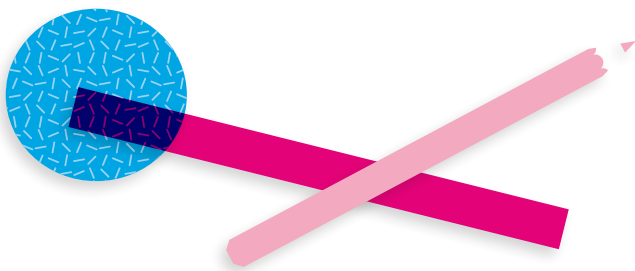


A low horizontal match (skill mismatch) might be taken as a signal to adapt the curriculum, but inferring such policy implications is only meaningful if other potential factors are considered. Is the skill mismatch combined with a low vertical match? Is the skill mismatch a temporary phenomenon influenced by the economic cycle? Or is the skill mismatch a typical experience of young graduates in the transition phase to get a more relevant and stable job (life cycle effect)? Are the knowledge and skills acquired during study more relevant in later stages of the career? It is obvious that tracer studies could provide a lot of answers to these questions, but only if the questionnaire used has a broad scope and if the design of the tracer study allows to get answers from graduates who have 'real' work experience after graduation. Tracer studies also have limitations. For example they may lack information on broader labour market context or can be biased and should therefore be complemented by employer opinions. They should be combined with other data sources and methods of skills anticipation and matching. These are described in detail in other volumes of the guide <sup>(6)</sup>.

Basic information about the ETF match project, which address skills mismatch as a challenge in most ETF partner countries, is provided in Box 11



<sup>6</sup> Volume 1 provides overview of different possible data sources and indicators which can be developed from them, including standard economic and labour market statistics. Volume 2 focuses on development of skills forecasts and foresights. Volume 4 on data from public employment services. Volume 5 on development of establishment skills surveys.



### Box 11. ETF: Match, Innovation and learning project (TED)

1. Why does ETF address 'matching of supply and demand of skills for the labour market'? Matching is about reducing the gap between supply and demand in the labour market, increasing the employability of the workforce and reducing skills shortages. The focus of the ETF project lies on education and training in a lifelong learning perspective, monitoring, anticipating and forecasting approaches, for both the demand and the supply side, and effective labour market management. Skills mismatch, a challenge in most ETF partner countries, leads to adverse impacts on individuals and whole economies, resulting in high youth unemployment and low competitiveness of enterprises. There is a need for effective approaches for better monitoring and forecasting of skills supplies and skills demands which also work under the framework conditions of ETF partner countries. Global competition, technology- dependency and industrial restructuring cause rapidly changing skills demands in transition and developing countries. The supply side of skills is shaped by demographic changes (migration, birth rates, ageing society) and reforms of their E&T systems. Improved matching systems are needed for better labour market outcomes. Monitoring and forecasting is not an end in itself but an input to evidence-based policy-making. The ETF matching project will therefore explore the question 'who needs what?' There is a need to better inform decision-makers and practitioners in the E&T and the labour market management systems. The overall project objective is to support ETF partner countries to improve their systems for a better matching between the supply and demand for skills in the short and medium term, thus enhancing the employability of youth and adults and improving economic competitiveness.

The specific objectives are i) to provide methodological instruments for measuring mismatch, ii) to develop methodological approaches and instruments for monitoring and anticipating skills requirements which are relevant to the specific conditions in developing and transition economies, iii) to elaborate policy briefs with recommendations for better matching approaches, and iv) to generate and share knowledge among ETF departments and country teams. ...

2. To make better use of the skills of high educated young people and contribute to enhanced productivity and competitiveness are top priorities. A mismatch between skills demand and supply leads to high numbers of unemployed people – among them many well educated young – on one side, and on the other side to skills requirements from employers which cannot be met. Large sectors of informal employment constitute a specific 'in' and 'out' for labour market participants, and in some cases a dual economy with modern enterprises at one side, and a traditional sector with low productivity at the other. The problem of skills mismatch has gained additional momentum with the impact of the global economic crisis on the labour markets in ETF partner countries; some have proved more, and others less shock resistant. Mismatch in the form of overeducated young people is triggering migration and means a waste of human resources.

Source: ETF: Match – innovation and learning project [http://etf.europa.eu/web.nsf/pages/PRJ\\_2012\\_WP12\\_40\\_17\\_EN](http://etf.europa.eu/web.nsf/pages/PRJ_2012_WP12_40_17_EN)



The tracer study will also address a broad range of dimensions of prior stages of the graduates' life retrospectively:

- (a) socio-biographic profile (such as gender and age),
- (b) learning prior to enrolment in higher education.

The study will gather relevant information about course of study and competencies gained:

- (a) the study conditions and provisions experienced;
- (b) own study behaviour;
- (c) direct results of study in terms of degree features;
- (d) perceived competencies upon graduation.

This will help to show the influence of values and choices of the individuals on their subsequent career.

The statistical analysis will not only provide simple descriptive findings but try to explain the causes of professional success and to analyse the impact of various features of TVET/higher education education/training:

- (a) to what extent do study provisions and conditions matter as compared to the socio-biographic background, prior education, selection at entry and students' study behaviour?
- (b) to what extent does TVET/higher education education/training matter in shaping competencies on graduation?
- (c) to what extent are competencies on graduation relevant for subsequent employment and work, compared to search strategies and to other recruitment criteria and human resource policies?

A tracer study of individual TVET/higher education institutions can take into account the specific profiles

of these institutions and their study programmes. It will provide information both on the professional success of graduates according to common yard sticks (fitness of purpose) and according to the specific aims set by individual institutions and programmes (fitness for purpose).

A complex study can be valuable in providing feedback not only on the degree of professional success, but also on many dimensions of career success and the factors which 'matter' in contributing to it. These should not be compared purely with a national average or with graduates from the specific field of study, but should include the role played by the characteristics of individual TVET/higher education institutions and study programmes.

## 2.4. Outcome assessment in quality assurance

Tracer studies excel in not only measuring output/output but also can help in explaining it and therefore allow for outcome-orientated assessments of study achievements.

Graduate (and employer surveys) offer one form of empirical study which can provide valuable information for evaluating the results education and training from a specific institution of education. This information may be used for further development of the institution in terms of quality assurance.

An advanced approach to tracer studies should enable the TVET/higher education institution to gather information to indicate possible deficits in a given educational programme and to serve as a basis for future planning activities.



For this, information on the professional success (career, status, income) of the graduates is needed as well as information on the relevance of knowledge and skills (relationship between knowledge and skills and work requirements, area of employment, professional position).

Graduates might also be asked to assess the study conditions and provisions they experienced retrospectively (evaluation in a narrow sense). This helps graduate surveys give valuable information on the conception of teaching with regard to job-orientated competencies/key competencies.

## 2.5. Career guidance and marketing

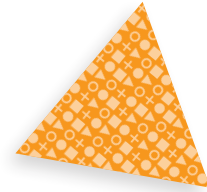
Information from studies can help the vocational orientation of current and prospective students.

There is also the opportunity of using alumni contacts to:

- (a) present personal experience reports by graduates;
- (b) place people on traineeships;
- (c) present organisations;
- (d) establish contacts between students and the job market.

Data from graduate surveys can also be used as an information source on study and careers, including by employment service providers together with data on vacancies and job applicants (see Volume 4).

Data can analyse factors of success and can support students in the choice of specialisations, while self-assessment by graduates (competencies, job requirements, criteria for success) can show the benefits of key qualifications and further qualifications.



## 2.6. Information for different stakeholders

Knowledge of employment fields, mobility and graduate satisfaction helps the general positioning of the TVET/higher education institution and is useful for stakeholders.

A tracer study can be designed in such a way that it can be valuable for a broad range of stakeholders, serving typical interest in acquiring knowledge about the links between study and subsequent employment:

- (a) government;
- (b) quality assurance agency;
- (c) employers;
- (d) employment agencies;
- (e) professional associations;
- (f) academic staff in higher education;
- (g) teachers in TVET/higher education;
- (h) managers of TVET/higher education institutions;
- (i) prospective students and their parents;
- (j) students;
- (k) the graduates themselves.

These objectives can only be reached if the results of the tracer study are open to the public. Unfortunately most tracer studies in the TVET/higher education sector sponsored by donor agencies are not open to the public: results are restricted to the sponsoring organisation.

## 2.7. Alumni office

Graduate surveys can also fulfil various functions in alumni work:

- (a) establishing a database of addresses for graduate surveys lays groundwork for broader contacts which can lead to a long-term attachment of graduates to the TVET/higher education institution;
- (b) graduate surveys also offer the opportunity of presenting the offers of alumni work as well as enquiring about possible interest in further education for graduates and, if applicable, defining target groups. This is also related to the marketing potential of tracer studies;
- (c) the retrospective assessment of study conditions for graduates is an indicator for the assessment of process, as are their careers, their experiences on the job market and their long-term job success.



## 2.8. Accreditation

Many countries have accreditation procedures for educational programmes or institutions. Regular tracer studies are a formal requirement for such accreditation processes in some countries (such as Germany).

Topics that could be relevant for accreditation/evaluation include:

- (a) transition to employment situation (time until the first employment, search time, search methods, employment characteristics of the first job);
- (b) employment situation at the time of the survey (working time, kind of contract, salary, fringe benefits);
- (c) work (job title, economic sector, work tasks, required competencies)
- (d) acquired competencies and used competencies;
- (e) evaluation of the study programme;
- (f) relationships between study and work.





## Chapter 3. Tracer study design

### 3.1. Overview

In this chapter answers are provided for key questions which must be answered in the early stage of any tracer study:

- (a) What are the objectives of the tracer study?
- (b) Which students/graduates should be invited to participate?
- (c) Which survey instruments will be used?

Developing a tracer study is a complex process because each decision at one stage has consequences for the others.

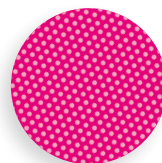
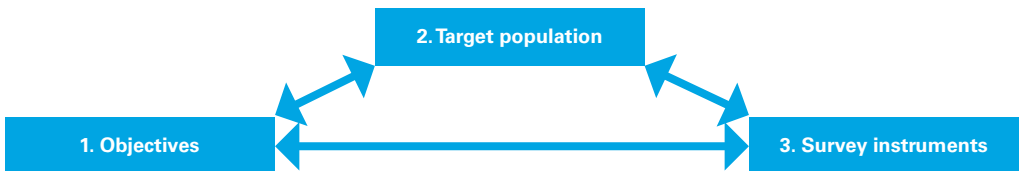
### 3.2. The design cycle

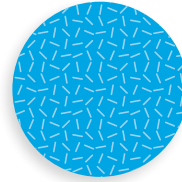
In an early stage of the tracer study decisions have to be undertaken on:

- (a) the target population (who shall be invited to participate in the survey?);
- (b) the time after graduation when the survey should take place;
- (c) the methods of data collection (online or paper questionnaire);
- (d) the kind of survey (cross-sectional or panel survey);
- (e) the coverage (sample or census) survey.

Design elements must meet the specified objectives of the tracer study as these two are closely related. Figure 6 demonstrates a feedback process for checking if the selected design elements fit to the objectives.

Figure 6. The design cycle





### 3.3. Target population

Most tracer studies focus on one homogenous group of students/trainees who finished their study at the same time (generation or graduation cohort). Such a group is called a cohort, as in graduates of the year 2013 or generation 2013.

The national graduate surveys in many countries (e.g. in Australia, France, Germany, Italy, Malaysia, Norway, Switzerland, the UK) select only one cohort as their target population.

The main reason for the decision to select only one cohort is the fact that the conditions of the transition to the labour market and education experiences might be quite different for different cohorts. It is assumed that for one cohort/generation the conditions are similar and comparable. Differences between cohorts (if a tracer study is done every year) are called 'cohort effects' if they can be differentiated from the effect that a survey is done at a certain year (effect of the historical time) or at a specific time after graduation (age effect).

For the explanation/interpretation of the labour market experiences and professional situation of the former students/trainees it is always necessary to take into account the relevant context, which might have changed in a short time. This is especially necessary for countries with education system structural changes and in times of economic crises.

Another important argument for selecting just one cohort is that including more than one cohort in one survey will hamper the analysis of effects of time. Suppose in a survey conducted in the year 2012 are included former students/trainees who finished their study programme in the years 2002 to 2012. Such tracer studies (mixed cohort design) are sometimes used when done on an ad hoc base and not regular. Some of the graduates have just finished and other already have a 10-year work experience. General findings from these surveys, such as 'XX% of the graduates are employed' or the 'the average income of the graduates is XXX', are meaningless because the employment situation of graduates might change over time in two respects.

If tracer studies are conducted regularly (every year), it is possible to compare the results of the different surveys to analyse changes over time (trend analysis). Especially when the study programmes have been changed, comparisons between the graduation cohorts would be an interesting analysis of the effects of such changes.

Only if the labour market situation has not changed can the differences of graduation cohorts in some aspects of their evaluation of study conditions or professional success might be attributed to their differences in educational experiences (cohort effect).

#### Recommendation 1: The target population

In general, it can be recommended to select only one cohort of graduates/trainees.

#### Justification

A tracer study which includes only one cohort of graduates/trainees makes the interpretation of the findings more easy and straightforward than a survey with mixed cohorts.

The interpretation is easier because it is not necessary to control the results all the time regarding differences by year of graduation.

The conditions of education/training and the labour market situation are similar for one cohort while in a mixed cohort survey the different conditions/context has to be considered in the interpretation of the results.

In a mixed cohort survey not only the conditions/context of education and labour markets might be different but also the duration of employment and work experience (age effects).

Therefore the individual background of the answers of the graduates/trainees might be quite complex in a mixed mode tracer study and difficult to disentangle.



### 3.4. Time after graduation

Closely related to the cohort question is that of the timing of the survey with respect to graduation. How much time should have passed until the graduates/trainees are invited to participate in the study? There are several factors to consider.

It can be argued that a tracer study should be done only a few months after graduation because this design provides rapid feedback and the graduates are easier to contact. Both reasons are pragmatic but can be criticised in relation to the objectives of the study. If the results are to be helpful in the improving a study programme, most graduates should have managed the transition to employment and relevant work experience.

A survey conducted about six months after graduation is too early, especially when labour market conditions are bad for young graduates. It makes no sense to conduct the survey when most graduates are still looking for the first job.

New graduates in many countries search for their first job for half a year. Then they start with specific tasks in which they have to learn to cope with the work requirements. Mainly it is a situation of training on the job, but sometimes formal training programmes are offered to the graduates.

Therefore we recommend selecting for the target population of the survey only graduates which have graduated at least one year before.

A survey conducted about two years after graduation can be good compromise between access to graduates (not too long ago), currency of the transition phase, and early career and work experience.

As the questionnaire aims at the studies as well as at the professional activity of graduates retrospectively,

the studies should not have been completed too long ago. A survey conducted about five years after graduation usually is no longer relevant to analysis of the transition process and first employment. The focus is more on real work experience and further education and training.

Most regular tracer studies in higher education are conducted between one year and three years after graduation (Costa Rica, France, Germany, Hungary, Indonesia, Italy, Switzerland). The first destination surveys in the UK and Australia are exceptional, being conducted about six months after graduation.

Some surveys with students are also called 'graduate survey' because they are conducted at the end of study and include questions regarding the transition to employment. It is recommended to use the term 'exit survey' for these to make a clear differentiation between a true tracer study and such a student survey.

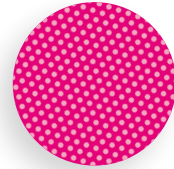
#### Recommendation 2: The timing of the survey

In general, it can be recommended to conduct the survey one to two years after graduation.

#### Justification

The timing of the survey one to two years after graduation is not long after the job search process for the first job. Therefore relevant information about the transition process can be obtained in such a survey. Most graduates should, at the time of the survey, have entered their first job and had work experience which might be relevant for the analysis of the relationships between education and work (degree of match).





### 3.5. Data collection methods

Decisions regarding data include:

- (a) degree of standardisation of the questionnaire;
- (b) method of contacting the graduates (personal, mail, e-mail);
- (c) method of collection (interview, self-administered online or paper questionnaire).

Most tracer studies have used written self-administered questionnaires (paper or online). Written standardised surveys are easily implemented for larger numbers and generate low postal distribution costs. Also, the data analysis can be carried out easily and takes little time.

Highly standardised questionnaires might be complemented by open questions, such as those on proposals for improving the study/training programme.

Respondents could also be asked whether they would be willing to participate in a follow-up interview to discuss selected topics in depth.

Further details about standardised questionnaires are provided in Chapter 4

Since interviewers are not involved with self-administered questionnaires the questions must be

well developed and tested to be sure that they are clear to the graduates and can easily be answered without any further explanation.

Invitations to participate in a self-administered survey can be delivered in a number of ways, including individually, by mail or e-mail, in group settings, or using mass media.

Although the invitation and the paper questionnaires can be sent together by mail, another option is to send just the invitation letter with a link to the online questionnaire (possibly accompanied with a personal code).

Interviews are mainly used:

- (a) when too little response is expected from postal distribution: a visit by an interviewer/researcher encourages response to a questionnaire;
- (b) when the completion of the questionnaire by the interviewee would be too difficult or too poor: in this case, the interviewer is looked on as an instructor;
- (c) when too little knowledge exists about a subject area to be able to develop a standardised questionnaire: the interviewer/researcher enlarges his knowledge.

Interviews with individual graduates or focus group interviews could give additional insights into the labour market experiences of the graduates.

**Table 1. Data collection methods**

| Method              | Remarks  |
|---------------------|--|
| Personal interviews | Very time consuming and costly if many graduates should be included                  |
| Mail survey         | Effective measure if addresses are available; main method                            |
| Telephone survey    | Sometimes used   |
| Online survey       | Recommended method; most efficient method if the graduates have fast internet access |



The use of online surveys has many advantages:

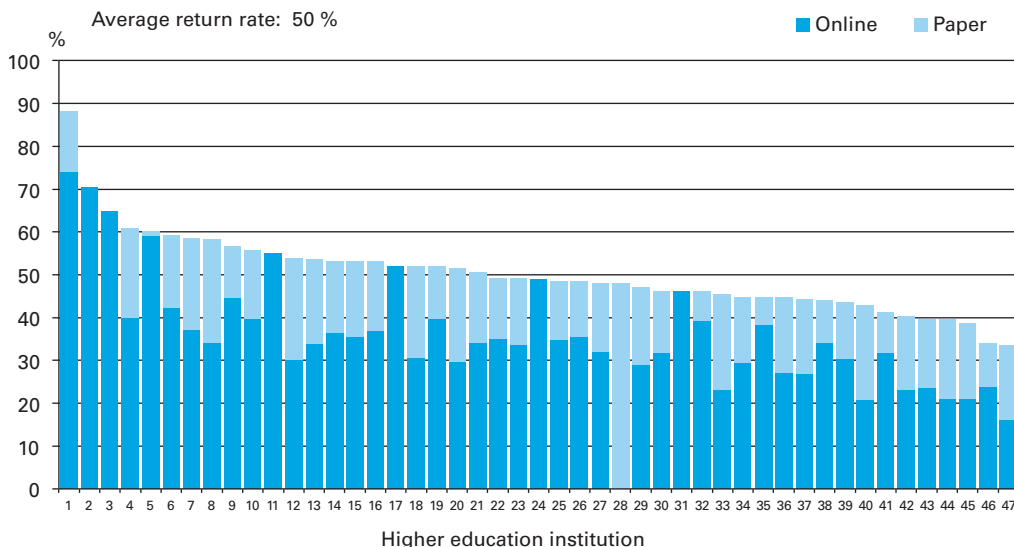
- (a) reduced costs: printing paper questionnaires and data entry are not required;
- (b) results of the survey are available very quickly;
- (c) no specialised staff for data entry necessary;
- (d) the questionnaire can be tailored for different groups (with filters), and therefore could look shorter.

Some disadvantages should also be considered. Sometime the drop-out rate (rate of not completed questionnaire) seems to be high. In the case of paper questionnaires, respondents tend to send only completed questionnaires back while filling in online questionnaires might be stopped at a certain question; the completed questions are already in the database when the respondent decides to stop filling in the questionnaire. Technical problems with the internet

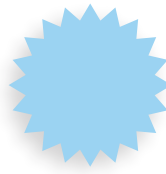
access Also and the implementation of the software for the online survey (response time of the server) might contribute to not-completed questionnaires. Additional the many browsers used (e.g. Firefox, Internet Explorer, Opera, Safari) and hardware (PC, notebook, tablet, smartphone) limits control of the way the graduates are delivered the questionnaire.

Figure 7 provides the response rates from 47 different surveys of higher education institutions in the KOAB network which used more or less the same questionnaire and the same number of reminders. Most institutions used a combination of a paper questionnaire with an online questionnaire (software QTAFI) while some use only an online questionnaire. Most respondents preferred to answer the online questionnaire instead of the paper version and the response rate achieved by institutions of higher education which used only an online questionnaire does not fall.

**Figure 7. Response rate of the KOAB survey 2009, by higher education institution and data collection method (%)**



Source: Incher-Kassel, KOAB graduate survey 2009; cohort 2007.



### Recommendation 3: Data collection methods

Use a standardised written questionnaires as survey method (distributed by mail, e-mail or as an online questionnaire).

#### Justification

Written standardised questionnaires are the most common data collection method, because they are easier to handle and usually much cheaper than the other methods. Especially where online questionnaires can be used with invitation letters (and reminders) sent by email, the costs for the survey are very low. Also, data entry and analysis requires less time and effort.

The questionnaires in Annexes 1 and 2 were designed for use in written surveys. It is possible, too, to deliver them via an interviewer and to either collect the completed questionnaire after a certain time or to be present when it is completed.

In either case, the questionnaires are not meant to be read aloud to the interviewee and to be completed by the interviewer.

Interviewers have to be trained appropriately, as they can have significant influence on the answers of the examined graduates.

### 3.6. Cross-sectional versus panel study

Most graduate surveys are cross-sectional studies: a population of graduates is asked at one time point only, such as two years after graduation.

Panel or longitudinal studies, in which the same persons are asked at different time points, are rare.

Longitudinal studies are necessary to obtain information on individual change, through combining answers from individuals at different times. Assigning identification numbers on a first survey, supported by name and address, can help in collating the date for the same individual from later surveys.

Longitudinal studies are more complicated to conduct and also the statistical analysis of the data is more demanding. The typical research questions of tracer studies do not require a longitudinal study.

### 3.7. Other design elements

We can find other design elements of graduate surveys which might be considered as well:

#### (a) region level:

to conduct a tracer study in a country with big differences in the employment conditions and the study conditions and provisions at the institutions of education by region, a relatively high number of graduates are required to participate in the survey. Suppose we would need a random sample of 1 000 graduates to get a representative sample for one country with no differences between regions. Then we would need a sample of  $4 \times 1\,000 = 4\,000$  in a country with four different regions to be able to control for the effect of region among all the other relevant factors;

#### (b) study programme:

for a representative random sample of graduates from one country it is not recommended to delete fields of study with a low number of graduates. Although the low numbers will not offer meaningful findings on a highly disaggregated level (such as field of study by institution of higher education),





these small fields must be integrated into the sample. If not, the sample for the whole country is no longer representative;

(c) **type of institution:**

the system of education in a country will determine which types are relevant. For international comparison we recommend the definitions of tertiary education in the regular OECD study *Education at a Glance* (<http://www.oecd.org>);

(d) **reputation/quality of the institution of education:**

the reputation or the quality of the institutions of education included might be differentiated between high, medium, and low and measured according to

the number of lecturers with a certain degree. In some countries reputation rankings are available based on different surveys and sometimes published by newspapers;

(e) **type of degree:**

a mixture of degree levels in an individual graduate survey is more difficult to handle. It offers the possibility to compare the relevance of a second or higher degree but many questions must be asked twice for the different study experiences. Also the age and the cohorts of the graduates are different, which affects the interpretation of the results;

(f) **number of institutions of education;**

(g) **length of questionnaire.**

## Box 12. Example of the selection of a target population

If you want to assess the effect of a master degree in the year 2015 (year of the survey), which cohorts should be included in the survey?

1. graduates of the year 2010 asked five years later; some of whom obtained a master in the meantime. With this design you control the cohort of first degree graduates, but the labour market situation of the time of job search might be different. And also the duration of work experience for the two groups: graduates with and without a master;
2. graduates with a first degree received in the year 2013 and graduates who received their second degree in the same year (generation survey). With this design you control the labour market situation, but the age and the year of the first degree are different.

When the labour market changes rapidly the second approach is recommended.

A comparison on the institutional level of aggregation (such as the average income of all graduates from one institution) is seldom meaningful for labour markets which are different for graduates by field of study and region.

As a minimum, the field of study should be controlled to compare graduates between institutions of higher education within the same field of study.





Considering the difficulties to conduct a tracer study and the necessary variables to get meaningful results it is strongly recommended not to use a short questionnaire of one to three pages. The unit costs of obtaining information from graduates are much higher for a short questionnaire than for a long one.

Experience suggests that a 10 to 20 page questionnaire does not dramatically reduce participation in a survey. The participation rate depends on several factors, of which the length of the questionnaire is only one element. It can be argued that a short questionnaire suggests very limited interest from the TVET/higher education institution in feedback from the graduates.

#### **Recommendation 4: Length of the questionnaire**

Use a questionnaire with about 12-16 pages

##### **Justification**

A short questionnaire is of little use for institutional tracer studies which aim to contribute to improving study programmes. Practical conclusions based on indicators of employment outcomes from a tracer study need many factors to be considered. Many aspects of employment and work (not just employment status and salary) must be measured and related to educational factors as well as other individual and context factors.

### **3.8. Regular tracer studies**

The objective should be to understand the evaluation/ feedback as a permanent process, as the conditions/ requirements of study courses are permanently changing. If tracer studies are implemented regularly, valuable time-oriented reference data are revealed.



#### **Recommendation 5: Regularity of tracer studies**

Tracer studies should be conducted regularly (i.e. every year)

##### **Justification**

Regular yearly institutional tracer studies allow comparison of the results over time. For example, it can be asked if improvement in the study conditions and provisions are also visible in employment outcomes.

Yearly tracer studies also allow the continuation of the learning process, as appropriately trained institution staff can improve their knowledge and skills without interruption.

If the number of graduates of some small study programmes is not enough for data analysis, the data of two or more surveys can be merged to get enough cases.

### **3.9. Requirements for institutional tracer studies**

Resources necessary for a study start with a word processor and appropriate software. Microsoft Word, as a part of the Microsoft Office package, is the most commonly used and is the basis of examples of questionnaires, codebooks, and reports in this guide: later versions of this software are usually less likely to crash with large or complicated formatted files such a questionnaire. Alternatives include the freeware OpenOffice.

The freeware programme QTAFl online (an open source project), written by Martin Guist, is good for an online survey.

See Table 2 for recommendations on the different activities. All tasks can be done with freeware: it is not necessary to buy software.



**Table 2. Software requirements for a tracer study**

| Activity   | Required kind of software | Recommendation   |
|--|---------------------------|--|
| Proposal writing   | Word processor            | Microsoft Office Word or Open Office Writer  |
| Questionnaire formatting and codebook writing            | Word processor            | Microsoft Office Word or Open Office Writer  |
| Administration of questionnaires, controlling of returns | Database                  | Microsoft Office Excel/Access or Open Office Calc or MySQL   |
| Data entry   | Database                  | QTAFI and SPSS or QTAFI Online questionnaire or Microsoft Access XP database or ASCII file with editor or Readsoft Eyes and Hands FORMS, automatic data capture with a scanner |
| Data analysis  | Statistics package        | QTAFI SPSS or R or STATA   |
| Charts   | Chart software            | Microsoft Excel or Open Office Draw or R or SPSS   |
| Presentations  | Presentation software     | Microsoft Powerpoint or Open Office Impress  |
| Report writing   | Word processor            | Microsoft Office Word or Open Office Writer  |

NB: QTAFI, questions, tables and figures: an open source project; for downloads and detailed information see <http://www.qtafi.de/qtafi/index.php/qtafi>

Besides the team leader, who should be an expert in TVET/higher education (subject matter related in case of a tracer study for a specific field of study) and who should manage the whole study, the following competencies are required in the team:


- (a) advanced knowledge and experience with appropriate wordprocessing software, especially with formatting (the concept of 'styles' should be well-known);
- (b) advanced knowledge of, and experience with, SPSS (the use of SPSS syntax should be well-known), STATA, or R;

- (c) knowledge of basic statistical concepts such as mean, variance, covariance and correlation, analysis of variance and regression analysis.

### 3.10. Data analysis

The data analysis should be carried out using SPSS, a programme that includes all important methods of data analysis and data manipulation. It is probably the most widespread programme of this type, is user-friendly, very well documented (excellent handbooks are available), and relatively easy to use.





The QTAFI tool will produce some SPSS programs automatically, based on the codebook. It can produce ready-to-print tables report more or less automatically (Schomburg, 2003).

You can use the online-questionnaire system QTAFI, which provides you not only with the automatic generation of user-friendly online questionnaires but also with simple data analysis (frequencies, crosstabs and graphical result presentation).

### 3.11. Costs of a tracer study

The costs of a tracer study depend on many factors.

Institutional tracer studies usually do not include staff costs, only the extra costs for the invitations by mail and the printing of questionnaires (if any). If the invitation letter can be sent by e-mail and the questionnaire is available online, the costs are very low.

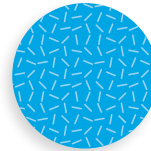
This chapter contains the basics of a cost calculation.

The following is a fictitious example of potential costs:

- (a) 500 graduates are to be invited to participate;
- (b) graduates will be invited by e-mail and/or mail;
- (c) three send-outs are foreseen (two reminder actions);
- (d) a response rate of 50% is expected ( $N=250$ );
- (e) an online survey will be used.

To update all addresses by phone calls seems to be rather cheap: only USD 200 are needed to get an updated database of 500 addresses.

If an online survey can be used than almost no other costs exist.





**Table 3. Costs estimation for a tracer study for one TVET/higher education institution (target population = 500 graduates; expected return rate = 50%)**

| <b>A. Updating addresses by phone calls</b>  |                              |                |              |                    |
|--|------------------------------|----------------|--------------|--------------------|
| <b>Elements</b>  | <b>Basic costs (USD)</b>     | <b>Minutes</b> | <b>Cases</b> | <b>Costs (USD)</b> |
| A.1 Phone call   | 0.05                         | 4              | 500          | 100                |
| A.2 Staff cost (student assistant)   | 0.03                         | 6              | 500          | 100                |
| A.3 Total  |                              |                |              | 200                |
| <b>B. Staff costs (optional)</b>   |                              |                |              |                    |
|  | <b>Costs per month (USD)</b> | <b>Months</b>  |              | <b>Costs (USD)</b> |
| B.1 Researcher   | 250                          | 6              |              | 1 500              |
| B.2 Administrative staff   | 125                          | 6              |              | 750                |
| B.3. Total   |                              |                |              | 2 250              |
| <b>C. Other (optional)</b>   |                              |                |              |                    |
| C.1 Computer   |                              |                |              | 500                |
| C.2 Phone, headset   |                              |                |              | 20                 |
| C.3 Desk and chair   |                              |                |              | 100                |
| C.4 Total  |                              |                |              | 620                |
| <b>D. Conducting the survey with paper questionnaires (three reminders) (optional)</b>               |                              |                |              |                    |
|  | <b>Unit costs (USD)</b>      | <b>Unit</b>    | <b>Cases</b> | <b>Costs (USD)</b> |
| D.1 Printing of questionnaires   | 0.20                         | Questionnaires | 1 000        | 200                |
| D.2 Paper, pencil, etc. (per month)  | 5.00                         | Months         | 12           | 60                 |
| D.3 Postages (three contacts)  | 0.20                         | Postages       | 1 500        | 300                |
| D.4 Return postages  | 1.00                         | Postages       | 250          | 250                |
| D.5 Reminder by phone call (500 cases per USD 0.20)  | 0.20                         | Phone calls    | 500          | 100                |
| D.6 Data entry of paper questionnaires (50 % return rate)  | 0.50                         | Questionnaires | 250          | 125                |
| D.7 Total  |                              |                |              | 1 035              |
| Total costs for a tracer study (A)<br>(only e-mail contacts; only online survey; no costs for staff) |                              |                |              | 200                |





To get the responses of 250 graduates about USD 500 are needed for the material costs (A.3 + D.3), which is about USD 2 for the participating graduates or USD 1 per graduate of the target population (with an online questionnaire, address update by phone and mail contacts). These are costs for conducting the survey. Costs for researchers and administrative staff are not calculated.

### 3.12. Timing and major work tasks of a tracer study

In general, a tracer study can be completed within 12 months and requires three basic steps, each of four months:

- (a) concept and instrument development; preparation of data collection;
- (b) data collection with reminder actions;
- (c) data analysis and report writing; dissemination activities; actions.

**Table 4. Phases of a tracer study, major work tasks, and duration**

| Phase                                 | Major work tasks  | Duration |
|---------------------------------------|---|----------|
| 1. Concept and instrument development | <ul style="list-style-type: none"> <li>• definition of survey objectives (selection of themes to be investigated)</li> <li>• survey design (selection of the cohorts of graduates to be included; strategies for tracing the graduates)</li> <li>• technical concept for carrying out the survey</li> <li>• collection of addresses</li> <li>• updating of addresses</li> <li>• formulation of questions and of response items</li> <li>• formatting of questionnaires</li> <li>• pre-test of questionnaires</li> <li>• printing of questionnaires and other dispatch material</li> </ul> | 4 months |
| 2. Data collection                    | <ul style="list-style-type: none"> <li>• training of survey team</li> <li>• distribution and collection of questionnaires</li> <li>• assurance of high participation (reminder actions)</li> </ul>  | 4 months |
| 3. Data analysis and report writing   | <ul style="list-style-type: none"> <li>• definition of coding systems for the responses to open questions</li> <li>• coding of open responses</li> <li>• data entry and data editing (quality control)</li> <li>• data analysis</li> <li>• preparation of survey report</li> <li>• workshop with students, graduates and employers</li> <li>• further actions to improve the study/training programme</li> </ul>  | 4 months |

### 3.13. Design examples from different studies

The wide range of the design of tracer studies can be best demonstrated by the following descriptions of some studies:

- (a) tracer study of the TVET graduates in Armenia;
- (b) tracer studies of the University of Indonesia;
- (c) graduate and employer survey of the faculty of engineering at the University of Dar es Salaam, Tanzania;
- (d) KOAB network tracer studies in Germany;
- (e) the Cheers study.

**Table 5. Tracer study of TVET graduates in Armenia**

| Institution           | Colleges and craftsmanship schools  |
|-----------------------|---|
| Target population     | 451 graduates (cohort 2009 and 2010) out of the total population of 1 924 TVET graduates in Ararat and Kotayk |
| Regularity            | One shot  |
| Number of questions   | 50 questions  |
| Number of variables   | About 100 variables   |
| Research institute    | Caucasus Research Resource Centre (CRRC Armenia)  |
| Funding institution   | ETF   |
| Data collection       | Interviews  |
| Number of respondents | 451   |
| Response rate         | Not meaningful  |
| Publications          | ETF and CRRC (2012).  |

**Table 6. Tracer studies of the University of Indonesia**

| Institution           | University of Indonesia   |
|-----------------------|---|
| Target population     | All graduates (cohort 2008: about 5 300) who finished their studies two years ago |
| Funding institution   | Own funds   |
| Regularity            | Every year since 2010   |
| Number of questions   | 70 questions  |
| Number of variables   | 300 variables   |
| Field of study        | All   |
| Data collection       | Online questionnaire (QTAFI software)   |
| Number of respondents | About 2 500   |
| Response rate         | 188188et response rate: 55%   |
| Publications          | Syafiq and Fikawati (2012).   |



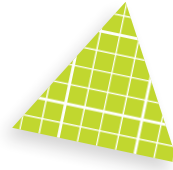


**Table 7. Graduate and employer survey of the Faculty of Engineering at the University of Dar es Salaam, Tanzania**

| Institution           | University of Dar es Salaam  |
|-----------------------|--|
| Target population     | All graduates (about 1 300) who finished their studies between 1977 and 1988 and their respective employers  |
| Number of questions   | Graduate survey: 70 questions; employer survey 30 questions  |
| Number of variables   | Graduate survey: 330 variables; employer survey 170 variables  |
|                       | Paper questionnaire  |
| Field of study        | Engineering (civil, mechanical, electrical as well as chemical and process engineering)  |
| Data collection       | Due to the lack of a graduate directory, the only way to reach the Faculty of Engineering graduates was to contact organisations and companies most probably employing them. Based on lists of organisations (public and private) the questionnaires were distributed in person by staff members of the Faculty of Engineering to employers and graduates. |
| Number of respondents | 653 graduates of the total of 1 300 could be contacted and 585 completed questionnaires were given back to the faculty.<br>Employers: of 1 100 potential employers, 283 were issued the questionnaires which finally resulted in 239 completed ones.   |
| Response rate         | Graduates: 41%; employers: 22%   |
| Major publication     | Baldauf and Lwambuka (1993)  |

**Table 8. The KOAB network tracer studies in Germany**

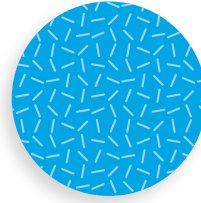
| Name of the study        | Tracer study cooperation project (KOAB)  |
|--------------------------|--|
| Target population        | One cohort of graduates of institutions of higher education<br>Panel: 1.5 year after graduation + 4.5 years after graduation<br>All degrees (bachelor, diploma, master, doctorate) |
| Type of survey           | Cross-sectional survey and panel survey  |
| Regularity               | Every year   |
| Time of data collection  | October-February   |
| Data collection method   | Standardised online and paper questionnaire with about 500 variables   |
| Individual questionnaire | Every institution has an own questionnaire with institution specific questions   |
| Institution              | 40 to 60 institutions of higher education  |
| Sample                   | All graduates of one cohort  |
| Field of study           | All  |
| Countries                | Germany and Austria (selected institutions)  |
| Number of cases          | About 200 000 graduates from the cohorts 2007 to 2012  |
| Response rate            | 40 to 50%  |
| Training                 | Every year 4-5 training workshops are organised for training of the tracer study team members of the institutions of higher education  |
| Network approach         | All key questions on the design of the survey and the questionnaires are decided by the network members (about 100 persons)  |
| Funding                  | Mainly by the institutions of higher education; in the starting phase also some funds from the Ministry of Education   |
| Major publications       | Schomburg (2011b; 2012).   |



**Table 9. International tracer study Cheers**

| <b>Name of the study</b> | <b>Career after higher education: a European research survey (Cheers)</b>  |
|--------------------------|--|
| Target population        | 1995 cohort of graduates of institutions of higher education<br>At least a three-year study programme<br>Graduates were asked three to four years after graduation<br>Only first degree (bachelor, diploma, laurea)<br>Representative survey at country level                          |
| Type of survey           | Cross-sectional survey   |
| Time of data collection  | Summer 1999  |
| Response rate            | Different by country; on average about 40%   |
| Number of cases          | About 40 000 graduates (about 3 000 each from 12 countries) who had graduated between autumn 1994 and summer 1995  |
| Institution              | Many institutions in each country  |
| Field of study           | All  |
| Countries                | Austria, Czech Republic, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, the UK  |
| Additional data          | Interview surveys with graduates and employers: about 400 interviews with graduates and employers, selected topics of higher education and work.<br>Additional graduates included in some countries.<br>Additional cohort 8-10 years after graduation in two Japan and the Netherlands |
| Funding                  | The studies in nine countries were funded by the EU (TSER) and three countries conducted parallel studies  |
| Major publications       | Schomburg and Teichler (2006); Teichler (2007).  |





## Chapter 4. Questionnaire development

### 4.1. Overview

This chapter introduces the key issues of survey methodology related to the development of standardised questionnaires. Different kinds of questions are explained, as well as proposals for tracer studies:

- (a) types of closed questions;
- (b) open questions;
- (c) amount of scale points;
- (d) sequence of questions;
- (e) layout of the questionnaire;
- (f) pre-test;
- (g) covering letter.

### 4.2. Standardised questionnaire

The questionnaire used in tracer studies is usually highly standardised. The possible answers are already formulated and the respondents mostly select their answers from a list. Answering the question is mainly done by making a mark (or a click in an online questionnaire).

**Table 10. Example of a standardised question**

| F5 – Are you permanently employed? |   |
|------------------------------------|---|
| 1                                  | <input type="checkbox"/> Yes                                |
| 2                                  | <input type="checkbox"/> No                                 |
| 3                                  | <input type="checkbox"/> Not applicable, I am self-employed |

In everyday life, we formulate open questions only because we directly communicate with our interlocutor and because we can ask again and again until we receive a satisfactory answer.



In a standardised survey, this is not possible. Only after the survey is finished do we receive responses from the interviewees and then we discover the way our question has been understood.

Annexes 1 and 2 show specimen questionnaires to consider as a base for surveys. This chapter examines the design of the questionnaires and the regulations to be considered.

### 4.3. Adapting the specimen questionnaires

Adapting the specimen questionnaires is necessary in each survey: the questionnaires in the annex cannot be used without reworking. Adapting is also necessary if you use other questionnaires as a basis.

Three crucial reasons to adapt are:

- (a) adapting to individual objectives of the graduate survey:

Each survey has its own objectives or, at least, emphasises certain questions. Depending to the objectives of the survey and the formulation of the questions which uses, it is necessary to complete or shorten some parts of the specimen questionnaires;

- (b) adapting to national conditions:

A specimen questionnaire can only anticipate special national features which may exist, for example, in the education and employment system to a certain extent. Individual questions should consider the special conditions of the target country.

- (c) adapting to special features of a field of study or study programme:

A specimen questionnaire can only partly anticipate special features of a study programme, which may exist in the graduates' subject area. Individual questions should consider the special conditions of your study programme.

#### 4.4. Length of the questionnaire

The number of pages is an inadequate measurement for the length of a questionnaire as differences in layouts (typeface and size, line spacing) affect the count. The length of the questionnaire can be better measured by the time to fill in the questionnaire, though this depends on the individual graduate. Graduates might have different experiences during study and after graduation which affect the time for completion. For example, unemployed graduates are not asked to answer the question regarding employment but are filtered to questions relevant to them. Stated needed time to fill in the questionnaire is just an average, which might be not relevant for some groups of graduates.

It is often argued that a shorter questionnaire would result in a higher response rate. This seems not to be true if we compare surveys with different length of the used questionnaire. Many factors influence the response rate and the length of the questionnaire is not as important, for example, as the number of reminders needed.

The specimen questionnaires cannot be considered either small or large. We estimate that the minimum questionnaire can be filled in 15-20 minutes on average.

We do not recommend reducing the number of pages but making an effort to present the interviewee with a well readable and clearly shaped text.

All elements of a questionnaire of the same type (such as questions, answer items, remarks) should be formatted in the same way.

Questions should be formatted differently from answers.

**Table 11. Example of questions**

|   |     |
|---|-----|
| F4 – How many hours do you work per week? | Q42 |
| F5 – Are you permanently employed?        | Q43 |

We propose a standardised format for the answer:

- (a) the answers should be placed at the left side of a page; with this formatting the codes of the answer (e.g. 1) are placed close to the box, which should be marked and close to the text of the answer, e.g. yes.
- (b) only with this 'answers to the left' layout you can have a common layout for all the different questions in your questionnaire.

**Table 12. Example of coded answers**

| F5 – Are you permanently employed? |   | Q43 |
|------------------------------------|---|-----|
| 1                                  | <input type="checkbox"/> Yes                                | V43 |
| 2                                  | <input type="checkbox"/> No                                 |     |
| 3                                  | <input type="checkbox"/> Not applicable, I am self-employed |     |

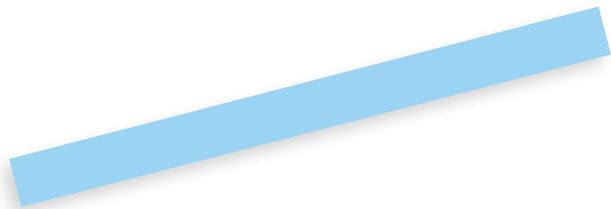
All scales should be presented in the same direction.

If, for example, you use five-point scales, with 1 = 'not at all' and 5 = 'to a very high extent', all your scales should be oriented like that.

Usually you should also not use scales with different scale points: if you decide to use a five-point scale then all the scales in your questionnaire should be a five-point scale.

For more details about scales see Section 4.10 onward.





#### 4.5. Data entry requirements

Information included in the questionnaire relevant to the technical process of data entry depends on the method of data entry used:

- (a) manual data entry using SPSS or other database (such as Microsoft Access). Variable names are not required in the questionnaire; but the codes related to the answers (values);
- (b) manual data entry using a spreadsheet such as Microsoft Excel. Same as (a);
- (c) manual data entry of ASCII data (with word processor or editor).

The fact that a questionnaires already contain the codes which have to be captured (figures which are related to the responses) and the columns (place/ position on which the figures are captured) makes data processing much easier. If the questionnaires do not contain these technical details, the data entry is much more time consuming and incorrect.

#### 4.6. Open questions

In everyday life, it is natural to ask questions and to receive answers. But it is not easy to write down these questions and the respective answers in such a way that we can assume they will be understood the 'right way' by respondents. The formulation of a new question to be included in the questionnaire takes a long time to ensure it is a 'good' question.

The use of an open question should be avoided when a closed question' can be formulated. We do not advise to avoid completely open questions – in the specimen questionnaires open questions are included as well – but open questions should be asked only where this cannot be avoided.

**Table 13. Examples of an open question**

| <b>F11 – What is your occupation/job title?<br/>(e.g. primary school teacher)</b> | <b>Q49</b> |
|---|------------|
| 1   | V49_TXT    |

If we want to analyse quantitatively the answers to an open question (as in, What do you suggest should be improved in your TVET/higher education institution?) we have to code them. Coding requires the development of categories of answers under which different individual responses can be subsumed. Thus, for an open question you have to do the work that for a closed question is done by the interviewees themselves.

#### 4.7. Closed questions

The formulation of a closed question requires the formulation of both the question and the possible response. Only the open question does not contain any response items.

In the following, we use the expression 'question' in the sense of a closed question including response items. The range of proposed responses has to be complete with all possible answers included.

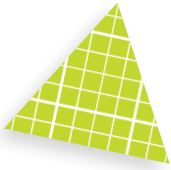
**Table 14. Examples of a closed question**

| <b>F5 – Are you permanently employed?</b>                     | <b>Q43</b> |
|---|------------|
| 1 <input type="checkbox"/> Yes                                | V43        |
| 2 <input type="checkbox"/> No                                 |            |
| 3 <input type="checkbox"/> Not applicable, I am self-employed |            |

#### 4.8. Variables, codes and values

All members of the survey team should have a basic understanding of terms fundamental to any survey research: variables, codes and values.





**Table 15. Explanation of variables, values, codes and columns**

|              |  |
|--------------|--|
| Variables    | <p>Coded responses of the interviewees for a certain question</p> <p><b>M1 – What is your gender?</b></p> <p>1 <input type="checkbox"/> Male</p> <p>2 <input type="checkbox"/> Female</p> <p>Example: possible responses for the question M1 are 'Male' which is coded as 1 and 'Female' which is coded as 2</p> <p>The variable 'gender' has the values 1 or 2.</p> |
| Values/codes | <p>Figures which are assigned to the categories of responses such as:</p> <p>1 = Yes</p> <p>2 = No</p> <p>1 and 2 are the 'values' of the variable 'gender'.</p> <p>For detailed explanations concerning the rules of coding, see Chapter 8.</p>   |
| Columns      | <p>Place/position on a data carrier (punch card, text file) where the codes are captured</p> <p>Example: (110) = -card 1 column 10</p> <p>No longer relevant, especially when you use an online questionnaire.</p>   |

#### 4.9. Answer scales and the level of measurement

Very important in the formulation of questions is knowledge of the consequences for later data analysis. Methodological literature usually distinguishes four types of question associated with different level of measurement: categorical scale; ordinal scale; interval scale; metric scale.

The higher the level of measurement the more statistical data analysis procedures can be used.

To allow powerful statistical analysis try to use ordinal scale instead of categorical scale where possible.

#### 4.10. Categorical or nominal scale question

In categorical or nominal scale answers, the codes or values related to the answers just indicate a difference from each other, but no ranking.

**Table 16. Example for nominal or categorical level of measurement**

|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>M1 – What is your gender?</b> |                                 |
| 1                                | <input type="checkbox"/> Male   |
| 2                                | <input type="checkbox"/> Female |

We measure the variable 'gender' with the help of a nominal scale of responses. In the social and other sciences measuring is carried out with the help of scales which can have a different level of measurement.





**Box 13. Nominal or categorical level of measurement**

- the codes only serve to differentiate the categories of responses;
- any figures can be used as codes;
- the preceding example could also have used different figures for the categories of responses as codes. The value of the figures is not important for the later data analysis; it is only essential to represent the individual categories by different figures;
- data analysis: mainly frequencies and crosstabs.

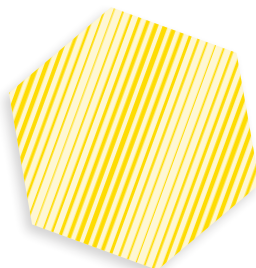
**4.11. Open-ended question**

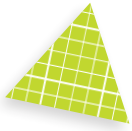
Table 17 illustrates a question to find out whether the graduates started their job search before or after graduation. However, we have to consider that some graduates did not search for employment because they took up further studies, so the first three responses cannot be applied for this group of graduates and we have to create an additional category of responses (code 4). Further, we cannot exclude the possibility that some graduates do not exactly remember the start of

searching for employment so we should also give the possibility of answering 'I do not know'. Some graduates may insist that they started their job search neither before nor after but exactly at the time of graduation; others may like to date the beginning of their job search more precisely. All those possible responses are included in the category 'other', which enables the interviewees to describe their 'special case' within our categories. We do not have to create an individual category for every possible response.

**Table 17. Example of a question with categorical responses (categorical or nominal scale)**

| <b>1 – When did you start seeking a job? (Exclude search for casual and vacation jobs)</b> | <b>Q43</b> |
|--|------------|
| 1 <input type="checkbox"/> More than one month before graduation                           | V43        |
| 2 <input type="checkbox"/> At the time of graduation (one month before or after)           |            |
| 3 <input type="checkbox"/> More than one month after graduation                            |            |
| 4 <input type="checkbox"/> Not applicable, no job search                                   |            |
| 5 <input type="checkbox"/> Other (please specify): .....                                   |            |





Our closed question is now only a 'semi-closed' one and, while checking the questionnaire, we have to check whether the response registered in the category 'other' can be subsumed to any of the other existing categories.

The collective category 'other' is used if further responses are to be expected and cannot/will not be proposed in detail.

#### 4.12. No answer

It is not common practice to give explicitly the response item 'no answer' in a questionnaire but some interviewees, for various reasons, will not respond (see Section 8.9).

In the dataset each variable will contain a code for 'no answer'. It is recommended to use such a code outside the common value range to make it easy to detect them in the data. Therefore it is meaningful to use -9 always as the value/code for 'no answer'.

Use -9 as the code for 'no answer'

#### 4.13. Only one answer

The chosen example shows some of the problems of formulating questions in cases where we can expect the interviewees to give one statement only, in the respective category of responses. The individual categories of answers exclude one another.

It is easier in cases where we can assume all interviewees are able to answer the question and where we can provide the whole range of possible answers.



#### 4.14. Multiple answers

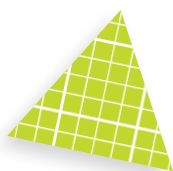
An important type of question is that which interviewees can respond to by ticking in a list of given items as many as they think to be applicable.





**Table 18. Example for multiple answers**

| <b>E3 – How did you search for the first job after graduation? Multiple answers possible</b>   | <b>Q31</b>           |
|--|----------------------|
| 1 <input type="checkbox"/> Replied to job ads/announcements (e.g. newspaper, internet, notice) | V31_1                |
| 2 <input type="checkbox"/> With the help of family contacts of parents, relatives              | V31_2                |
| 3 <input type="checkbox"/> With help of personal contacts of friends, fellow students etc.     | V31_3                |
| 4 <input type="checkbox"/> Speculative application – independent contact to employers          | V31_4                |
| 5 <input type="checkbox"/> Through internships during my course of studies                     | V31_5                |
| 6 <input type="checkbox"/> Through internships after graduation                                | V31_6                |
| 7 <input type="checkbox"/> Through (side) jobs during the study                                | V31_7                |
| 8 <input type="checkbox"/> Through (side) jobs during after graduation                         | V31_8                |
| 9 <input type="checkbox"/> I was contacted by an employer                                      | V31_9                |
| 10 <input type="checkbox"/> Job fair   | V31_10               |
| 11 <input type="checkbox"/> Through the public job centre                                      | V31_11               |
| 12 <input type="checkbox"/> Through private job agencies                                       | V31_12               |
| 13 <input type="checkbox"/> Through internet (social) networks (e.g. FACEBOOK)                 | V31_13               |
| 14 <input type="checkbox"/> Through the career centre of the TVET/higher education institution | V31_14               |
| 15 <input type="checkbox"/> Through teaching staff at the TVET/higher education institution    | V31_15               |
| 16 <input type="checkbox"/> Not applicable, I have not searched for employment                 | V31_16               |
| 17 <input type="checkbox"/> Other (please specify): .....                                      | V31_17<br>V31_17_TXT |



Each response item constitutes one variable.

The scale of answers is not explicitly indicated but we interpret a ticked item to mean 'yes' and the fact that no item has been ticked to mean 'no'. It will be explained later how to realise this in the data analysis.

In the data file the 'no answers' (not ticked items) are recoded to '2' = 'no'. If no item of the question is ticked we consider the whole question as 'no answers' which means that all individual items are recoded to '-9' = 'no answer'.

If multiple responses are possible, this has to be indicated in the question as 'multiple answers possible'; in the specimen questionnaires all questions allowing multiple responses have included this indication.

This kind of question is always used when a clear-cut scale of responses is meaningful. Someone could have 'contacted a public employment agency' or not.

In the questionnaires, no codes should be printed for multiple response answers. For data capturing a '1' will be entered for a ticked response.

#### 4.15. Ordinal responses

In some questions, we ask the interviewee to provide a graded assessment of the response with the help of a five-point scale. In such cases, measurement is done with an ordinal scale level, i.e. a value in the scale is not only different from the others but also taking a higher or lower position than the others (rank order).

**Figure 8. Example of an ordinal scale question**

| C2 – How would you rate the study conditions and provisions you experienced at the TVET institution? |                          |                          |                          |                          | Q20   |
|--|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Very bad   |                          | Very good                |                          |                          |   |
| 1  | 2                        | 3                        | 4                        | 5                        |   |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of classroom learning <b>V20_1</b>                              |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Student recreational facilities on campus <b>V20_2</b>                  |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of learning materials (e.g. books, internet access) <b>V20_3</b> |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity for consultation with teaching staff <b>V20_4</b>           |

This example differs in various respects from the two preceding ones. The question: 'how do you rate the ...' only makes sense after adding the items or statements, for example 'quality of classroom learning'.

Moreover, the categories of responses are not completely verbalised but only the beginning and the end of the scale: 1=very bad and 5=very good. Each item is a 'question' and a variable in the dataset.

Although the variables only have an ordinal level of measurement, and therefore all those arithmetical proceedings are improper which suppose that the values have the same distance from one another (mean, variance), it is common practice and even supplies plausible results in the data analysis not to follow this restriction stringently but to treat these variables as if they were metrical.

Such scales of response are used in cases where interviewees can be expected to give a graded assessment. In principle, the possible responses 'yes'-'no' or 'good'-'bad' could also be proposed, which are scales of answers too, but one with two pronounced characteristics only.

#### 4.16. How many scale points of an ordinal scale?

The smaller the number of characteristics in the scale of responses, the 'harder' the decision about the correct answer for the interviewees.

Graded responses are more useful when it can be assumed that there is no need for interviewees to give a strict yes-no-response concerning, for example, their opinion about the usefulness of their studies.

Using scales with five possible responses, it is important that all scales are polarised the same way, for example the broadest consent with an item is always registered on the left hand side (value 1). Varying the degree of grading is rarely justified.

Do not use different kinds of scales within one survey

Seven-point scales are used more often in US surveys but, on the whole, the use of five-grade scales is predominant.

Arguments in favour of five-point scales:

- (a) a five-point scale is an uneven scale; only uneven scales can fit a normal curve which is statistical advantage over all even scales;
- (b) a five-point scale approximates in many countries the use of school grades, which constitutes a kind of common metric. It depends on the country whether the scale should go from '1' = high/good/great extent or low to '5' = low/bad/not at all or the reverse order;
- (c) a five-point scale is more easy to interpret than a seven-point scale. Usually we will count the answers 1 and 2 (if the scale runs from 1 = 'very good' to 5 = 'very bad' and present the percentages of 'good'.

#### 4.17. Verbalising the scale points

Only the anchors of the scale should be verbalised because it is very difficult to find balanced verbalisation of the scale points between.

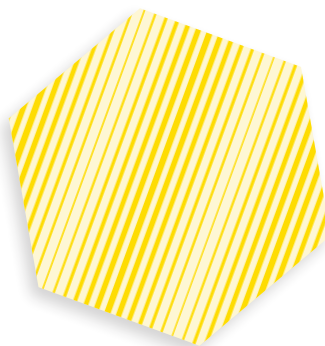
In Figure 9 examples 1 and 3 are correct; example 2 is incorrect because it seems to be difficult to understand the difference between 'fully agree' and 'agree' on the one side and between 'not at all agree' and 'not agree' on the other side. Also, the scale is not well balanced because 'partly agree' sounds more on the 'agree' side than the 'not agree' side.



**Figure 9. Verbalising the scale points**

|   |  |  |   |  |   |       |
|---|--|--|---|--|---|-------|
| 1 | Very good<br>1<br><input type="checkbox"/>   | 2<br><input type="checkbox"/>          | 3<br><input type="checkbox"/>                 | 4<br><input type="checkbox"/>              | Very bad<br>5<br><input type="checkbox"/>         | Right |
| 2 | Fully agree<br>1<br><input type="checkbox"/> | Agree<br>2<br><input type="checkbox"/> | Partly Agree<br>3<br><input type="checkbox"/> | Not agree<br>4<br><input type="checkbox"/> | Not at all agree<br>5<br><input type="checkbox"/> | Wrong |
| 3 | Fully agree<br>1<br><input type="checkbox"/> | 2<br><input type="checkbox"/>          | 3<br><input type="checkbox"/>                 | 4<br><input type="checkbox"/>              | Not at all agree<br>5<br><input type="checkbox"/> | Right |

Only the anchors of the scale should be verbalised





#### 4.18. Metrical level of measurement

Few interval-scaled variables are measured in social-sciences surveys: examples are income, age, period of job search.

Such data are best requested with the help of an open question and possibly classifying the responses in the data analysis (see Chapter 8).

**Table 19. Example for metrical measurement**

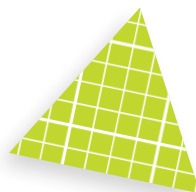
| NU101/ME4 | M2 – In which year were you born?   | Q82     |
|-----------|---|---------|
| 1         | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Year of birth | V82_NUM |

Subject: Year of Birth; Page number online; Filter online.

#### 4.19. Rules for formulating questions

**Table 20. Rules for formulating questions**

|   |   |
|---|---|
| All questions have to fit into the context of the survey                | The interviewee has to be able to understand why a certain question has been asked. Each question has to appear to be significant in the framework of the survey. From this rule, a strict criterion arises for all new candidates. Questions may seem to be interesting but when they do not fit into the framework of the survey they cannot be included. |
| The questions should be related to the object as concretely as possible | Poor: Have you already searched a vacancy for a long time?<br>Better: How long did you search for a vacancy?  |
| Try to avoid all valuation in the questions                             | Poor: Don't you think, too, that the workshop training should be abolished?<br>Better: Do you think, too, that...?  |
| Check all questions for their neutrality                                | The violation of the neutrality may already be revealed by only including 'positive' items in the item lists of the responses.  |
| Each question and each item has to be definite                          | Therefore, check whether your questions/items contain any ambiguous enumerations. Poor: Should the department XY abolish the workshop training or the practical training in industry? Yes/No  |
| Avoid abbreviations   |   |
| Use a simple language and short sentences                               | Testing understanding of language is not the point of the survey.   |





#### 4.20. Question sequence

The importance of the sequence of individual questions may, at first, be less evident than the rules for formulating them. Consider that each question has an effect on the following questions.

The first questions of a questionnaire are very significant as they show the interviewee what kind of questionnaire it is, and they also reveal how long it will take to complete it. These first questions should be of that kind that can be answered quickly and easily.

It is assumed that the degree of attention/seriousness is lower at the beginning than it is in the 'middle'. This is also a reason for asking easy questions at the beginning. However, towards the end, tiredness might occur or even simply the wish to complete the questionnaire quickly.

Place simple questions at the end.

As far as possible, the questionnaire should be structured in topics which explain their context for the interviewee in addition to the individual questions. The structure of the topics in the graduate questionnaire should follow the biography of the graduates: study, transition, profession, further planning.

Within the different topics, the sequence of the questions also arises from the formal criterion of whether the questions should be answered by all graduates or only by certain groups of graduates. Filtering should be as easy as possible, so, at the beginning, questions should be asked which apply to all.

#### 4.21. Questionnaire layout

In designing the layout, we wanted to make sure that it is possible to change the specimen questionnaires with the help of the standard equipment available in the universities and to produce a finished copy ready for printing. With this aim, the formatting of the questionnaire uses only a few style sheets within Microsoft Word.

#### 4.22. Covering letter

The covering letter can be printed on the cover of the questionnaire or using a separate sheet of paper and including this in the questionnaire.

We suggest using two different covering letters:

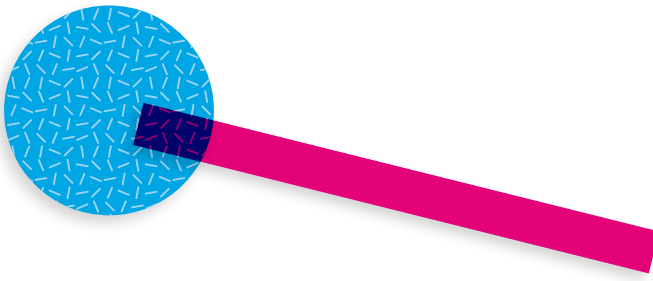
- a letter from the department/the TVET/higher education institution asking for participation in the survey;
- a letter from the head of the project that contains assurance of confidential treatment of the statements of the interviewees.

The covering letter should always contain:

- the description of the purpose of the survey;
- the use of the information/data;
- statements about data protection/privacy;
- the offer to inform the participant about the results of the survey;
- information about the implementing institution.







### 4.23. Testing

Even if you copy most of the questions from other questionnaires you should carry out a pre-test.

#### Test the questionnaire

The test should come only after finishing the prototype of the questionnaire (finishing format including layout). If possible, the questionnaire should be printed double-sided.

The test should aim to use respondents who do not participate in the main survey, such as those who only graduated recently or those who graduated quite some time ago. Selection of graduates at this stage does not aim to achieve representativeness for a defined population but to obtain a great variety of professional careers and of other individual characteristics; this should help show whether the questionnaire proves worthwhile for all graduates.

There is no prescription for how many graduates should be involved in the test.

#### Carry out the test as a quasi-interview.

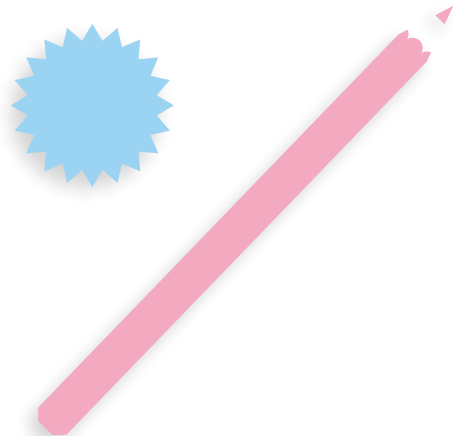
It is of value to organise the test exercise as a kind of learning process, more than trying to maximise the number of responses. A test that uses a written questionnaire will reveal only indirectly which questions caused difficulties; the reasons for uncompleted questions will not be explained at all. As quasi-interview it is possible to watch the graduates completing the questionnaire and, if help is needed or

is, necessary, this offers concrete indication of the need to improve the questionnaire.

Respondents can also be invited to the TVET institution for a classroom-interview.

The test should pay special attention to the following questions:

- (a) are all questions answered? If not, why not?
- (b) are the filter indications definite and were they followed?
- (c) which questions are difficult to understand?
- (d) how long does the processing take?



## Chapter 5.

### Questionnaire modules for a tracer study

#### 5.1. Overview

The content of a questionnaire depends of course on the specific objectives/research questions. This chapter offers proposals for questions which are very common in tracer studies.

Examples for the task of transform the objectives of the survey into particular questions and into a range of possible answers are seen in the two options in annexes 1 and 2:

- minimum version (50 questions, 170 variables);

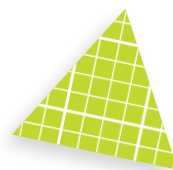
- questionnaire modules (102 questions, 340 variables).

Both questionnaires have almost the same number of modules (15 or 16) but a different number of questions in each. The questionnaires can be used almost without change, but some adaptations are recommended.

#### 5.2. Minimum version of a TVET/higher education tracer questionnaire

**Table 21. Number of questions and variables of the TVET/higher education tracer study specimen questionnaires**

| Seq. number | Module number and title   | Minimum questionnaire |           | Specimen modules |           |
|-------------|---|-----------------------|-----------|------------------|-----------|
|             |   | Questions             | Variables | Questions        | Variables |
| 1           | A The course of studies at the xyz TVET institution                               | 2                     | 3         | 12               | 27        |
| 2           | B Internship and work experience during course of studies at the TVET institution | 2                     | 2         | 6                | 6         |
| 3           | C Evaluation of study conditions and study provisions at the TVET institution     | 2                     | 22        | 6                | 58        |
| 4           | D Satisfaction with study   | 3                     | 3         | 4                | 14        |
| 5           | E After graduation from the TVET institution                                      | 5                     | 19        | 10               | 40        |
| 6           | F Employment and work   | 12                    | 28        | 16               | 37        |
| 7           | G Work requirements   | 1                     | 11        | 1                | 11        |
| 8           | H Relationship between study and employment                                       | 6                     | 19        | 6                | 19        |
| 9           | I Work orientation and job satisfaction   | 3                     | 32        | 4                | 49        |
| 10          | J Vocational education/training before study at the TVET institution              | 3                     | 3         | 4                | 4         |
| 11          | K Further TVET or higher education after study at the TVET institution            | 2                     | 5         | 7                | 17        |
| 12          | L Further vocational/professional training  | 2                     | 12        | 4                | 14        |
| 13          | M Demographic information   | 2                     | 2         | 4                | 6         |
| 14          | N Migration and regional mobility   | 2                     | 4         | 6                | 11        |
| 15          | O Your comments and recommendations   | 3                     | 3         | 7                | 11        |
| Total       |   | 50                    | 168       |                  |           |





**Table 22. Subjects of the minimum questionnaire**

| No | Question | Subject/topic   |
|----|----------|---|
| 1  | A4       | Kind of qualification   |
| 2  | A5       | Name of the study programme   |
| 3  | B1       | Institution of higher education   |
| 4  | B5       | Employment during study   |
| 5  | C2       | Evaluation of the study conditions and provisions   |
| 6  | C4       | Evaluation of the study elements related to employment and work                                       |
| 7  | D2       | Satisfaction with the selection of the field of study   |
| 8  | D3       | Satisfaction with the selection of the TVET/higher education institution                              |
| 9  | D4       | Satisfaction with the study in general  |
| 10 | E1       | Employment status after graduation  |
| 11 | E2       | Waiting time until start of first job after graduation  |
| 12 | E4       | Reasons for no job search   |
| 13 | E6       | Duration of job search (only graduates who searched a job after graduation)                           |
| 14 | E7       | Most successful method for finding the first job (only graduates who searched a job after graduation) |
| 15 | F1       | Employment status at the time of the survey   |
| 16 | F3       | Number of jobs since graduation   |
| 17 | F4       | Working hours per week  |
| 18 | F5       | Kind of employment contract   |
| 19 | F8       | Region of employment  |
| 20 | F9       | Type of employer  |
| 21 | F10      | Economic sector of employment   |
| 22 | F11      | Job title   |
| 23 | F12      | Main work duties  |
| 24 | F13      | Gross monthly income  |
| 25 | F14      | Kind of fringe/other benefit(s)   |
| 26 | F15      | Size of the company/firm/organisation   |
| 27 | G1       | Required competencies   |
| 28 | H1       | Utilisation of acquired knowledge and skills in the job   |
| 29 | H2       | Appropriateness of field of study for the job   |
| 30 | H3       | Match of job and qualification/degree level   |
| 31 | H4       | Appropriateness of position to study  |
| 32 | H5       | Reasons for not closely related job   |
| 33 | H6       | Evaluation of the usefulness of studies   |
| 34 | I2       | Characteristics of employment and work  |
| 35 | I3       | Planned job changes   |
| 36 | I4       | Job satisfaction  |



| No | Question | Subject/topic   |
|----|----------|---|
| 37 | J1       | Vocational training/post-secondary school courses before entering the TVET/higher education institution         |
| 38 | J2       | Kind of vocational training/post-secondary school courses before entering the TVET/higher education institution |
| 39 | J3       | Employment before TVET/higher education education/training  |
| 40 | K1       | Further studies/training  |
| 41 | K2       | Subject(s) of further studies/training  |
| 42 | L1       | Further professional training after graduation  |
| 43 | L2       | Topics of received further professional training  |
| 44 | M1       | Gender  |
| 45 | M2       | Year of birth   |
| 46 | N1       | Country of birth  |
| 47 | N5       | Country of residence  |
| 48 | O2       | Not liked elements of study   |
| 49 | O3       | Recommended changes for the TVET/higher education institution/study programme                                   |

### 5.3. Module A: the course of studies at the TVET/higher education institution

answered quickly and easily and is supposed to induce the interviewees to remember their time as a student.

This first module deals only with objective characteristics of the course of studies. This part will be

**Table 23. Specimen questionnaire for Module A**

| Seq. number | Module number and title                             | Minimum questionnaire |           | Specimen modules |           |
|-------------|---|-----------------------|-----------|------------------|-----------|
|             |   | Questions             | Variables | Questions        | Variables |
| 1           | A The course of studies at the xyz TVET institution | 2                     | 3         | 12               | 27        |

Module A is to be answered by all interviewees and should be placed at the beginning.

The following objective information on the course is often required:

- (a) period (year of start and year of end);
- (b) major field of study;
- (c) name of institution of higher education;

- (d) type of institution of higher education;
- (e) kind of degree earned (diploma, bachelor);
- (f) grade.





**Table 24. Subjects of Module A**

| Seq. | Number | Subject/topic  |
|------|--------|--|
| 1    | A1     | Name of the TVET/higher education institution                  |
| 2    | A2     | Part-time study  |
| 3    | A3     | Date of graduation   |
| 4    | A4     | Kind of qualification  |
| 5    | A5     | Name of the study programme                                    |
| 6    | A6     | Duration of the study programme                                |
| 7    | A7     | Reasons for selection of the TVET/higher education institution |
| 8    | A8     | Financial support of the study                                 |
| 9    | A9     | Consideration of cancelling the study                          |
| 10   | A10    | Reasons for consideration of cancelling the study              |
| 11   | A11    | Duration of attending courses (hours)                          |
| 12   | A12    | Duration of study activities outside courses (hours)           |

To allow comparison with results of other surveys, the subject area should be recorded as accurately as possible and should only be summarised in the analysis. Subject areas which were relevant for the final degree should be requested, as the graduates could have started a further course of study or could have studied a different subject before. Use the ISCED codes on the lowest level for international comparison. See Volume 1 (Říhová, 2014) for more information on ISCED and other international classifications.

All responses should be available for this (main-break-variable) so it is important to check whether options can be surveyed if no statements are given.

Check whether the subjects can be summarised, especially if only a few case identification numbers are available.

Type of degree and degree level are indicators for the performance level of the graduates. To what extent are

graduates who are more successful than others during their studies also more successful in seeking an occupation or in their job? Does the employment system reward performance or are there other criteria of importance?

The question on reasons for deciding to study at the TVET/higher education institution is directed to a time which, for some graduates, may be long ago. Therefore, this question should not be overvalued. It even can be dropped, especially if surveys of first year students or student evaluations are available. It also can be dispensed with if there are no other institutions in a country offering comparable courses of studies. Not all conceivable reasons are given in the list of answers.

Special features of the institution/of the course of studies should be considered and adaptation allowed of some of the response items or supplements





#### 5.4. Module B: internship and work experience during course of studies at the TVET/higher education institution

**Table 25. Specimen questionnaire for Module B**

| Seq. number | Section number and title   | Minimum questionnaire |           | Modules   |           |
|-------------|--|-----------------------|-----------|-----------|-----------|
|             |  | Questions             | Variables | Questions | Variables |
| 2           | B Internship and work experience during course of studies at the TVET/higher education institution | 2                     | 2         | 6         | 6         |

**Table 26. Subjects of Module B**

| Seq. | Number | Subject/Topic                       |
|------|--------|-------------------------------------|
| 13   | B1     | Institution of higher education     |
| 14   | B2     | Number of mandatory internships     |
| 15   | B3     | Number of voluntary internships     |
| 16   | B4     | Duration of internships             |
| 17   | B5     | Employment during study             |
| 18   | B6     | Duration of employment during study |

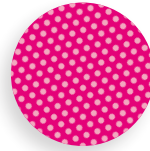
#### 5.5. Module C: evaluation of study conditions and study provisions at the TVET/higher education institution

This part contains, in a condensed form, the main questions on the subjective evaluation of the course of studies. In the last part (O comments) the same subject will be picked up again, but this time in an open form. This order has been chosen to keep the influence of the standardised questions on the open ones as low as possible. Also, it is to be expected that after mentioning the employment situation and especially the use of the qualifications acquired, the answers to open questions will be richer in content.

The content of the statements of the questions in this part is often misjudged. It is neither legitimate to play down assessments as 'only subjective' statements,

nor is it right to call them 'objective'. It is of little interest to interpret the marginal distribution (how many respondents have a positive opinion of the structure of the studies?) but it is interesting to analyse and interpret the differences in the assessments of the groups (such as age groups, groups of subject areas).

A subjective assessment of the studies by the graduates will not really conclude, for example, that the institute's buildings are bad, but only that the graduates consider them poor. This question also can be put to students. This is the first question asking the interviewees to specify their answer with the help of a five-grade scale. Therefore, this type of question is described in detail and it is made especially clear that an answer is required for each of the listed characteristics.



**Table 27. Specimen questionnaire for Module C**

| Seq. number | Section number and title  | Minimum questionnaire |           | Modules   |           |
|-------------|---|-----------------------|-----------|-----------|-----------|
|             |   | Questions             | Variables | Questions | Variables |
| 3           | C Evaluation of study conditions and study provisions at the TVET institution | 2                     | 22        | 6         | 58        |

**Table 28. Subjects of Module C**

| Seq. | Number | Subject/topic   |
|------|--------|---|
| 19   | C1     | Methods of teaching and learning  |
| 20   | C2     | Evaluation of the study conditions and provisions                       |
| 21   | C3     | Evaluation of the advisory and guidance elements                        |
| 22   | C4     | Evaluation of the study elements related to employment and work         |
| 23   | C5     | Existing connections/contacts to the TVET/higher education institutions |
| 24   | C6     | Wished connections/contacts to the TVET/higher education institutions   |

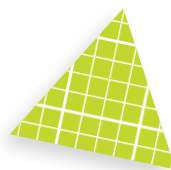
## 5.6. Module D: competencies and satisfaction with study

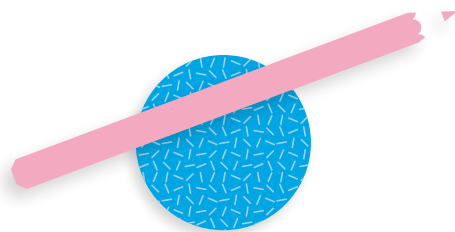
**Table 29. Specimen questionnaire for Module D**

| Seq. number | Section number and title  | Minimum questionnaire |           | Modules   |           |
|-------------|---------------------------|-----------------------|-----------|-----------|-----------|
|             |                           | Questions             | Variables | Questions | Variables |
| 4           | D Satisfaction with study | 3                     | 3         | 4         | 14        |

**Table 30. Subjects of Module D**

| Seq. | Number | Subject/Topic  |
|------|--------|--|
| 25   | D1     | Acquired competencies at the time of graduation                          |
| 26   | D2     | Satisfaction with the selection of the field of study                    |
| 27   | D3     | Satisfaction with the selection of the TVET/higher education institution |
| 28   | D4     | Satisfaction with the study in general                                   |





## 5.7. Module E: after graduation from the TVET/higher education institution

The focus here is the transition from studies to a profession. One question relates to the chronological structure of this process, the course of transition. The

following questions refer to the strategies of seeking employment. These questions only refer to the first search for employment. Since, for different reasons, some graduates do not seek employment after finishing their studies, considerable attention has to be paid to correct filter guidance.

**Table 31. Specimen questionnaire for Module E**

| Seq. number | Section number and title                     | Minimum questionnaire |           | Modules   |           |
|-------------|--|-----------------------|-----------|-----------|-----------|
|             |  | Questions             | Variables | Questions | Variables |
| 5           | E After graduation from the TVET institution | 5                     | 19        | 10        | 40        |

**Table 32. Subjects of Module E**

| Seq. | Number | Subject/topic  |
|------|--------|--|
| 29   | E1     | Employment status after graduation   |
| 30   | E2     | Waiting time until start of first job after graduation   |
| 31   | E3     | Job search methods for first job   |
| 32   | E4     | Reasons for no job search  |
| 33   | E5     | Timing of job search (only graduates who searched a job after graduation)                                    |
| 34   | E6     | Duration of job search (only graduates who searched a job after graduation)                                  |
| 35   | E7     | Most successful method for finding the first job (only graduates who searched a job after graduation)        |
| 36   | E8     | Number of applications for employment (only graduates who searched a job after graduation)                   |
| 37   | E9     | Number of acknowledgements (only graduates who searched a job after graduation and approached employers)     |
| 38   | E10    | Number of calls for interviews (only graduates who searched a job after graduation and approached employers) |







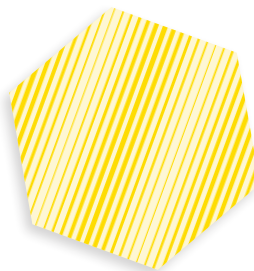
## 5.8. Module F: employment and work

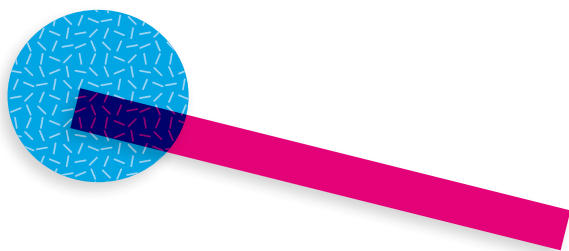
**Table 33. Specimen questionnaire for Module F**

| Seq. number | Section number and title | Minimum questionnaire |           | Modules   |           |
|-------------|--------------------------|-----------------------|-----------|-----------|-----------|
|             |                          | Questions             | Variables | Questions | Variables |
| 6           | F Employment and work    | 12                    | 28        | 16        | 37        |

**Table 34. Subjects of Module F**

| Seq. | Number | Subject/topic                                       |
|------|--------|---|
| 39   | F1     | Employment status at the time of the survey         |
| 40   | F2     | Aspects of international mobility                   |
| 41   | F3     | Number of jobs since graduation                     |
| 42   | F4     | Working hours per week                              |
| 43   | F5     | Kind of employment contract                         |
| 44   | F6     | Duration of search for current job                  |
| 45   | F7     | Duration of work experience                         |
| 46   | F8     | Region of employment                                |
| 47   | F9     | Type of employer                                    |
| 48   | F10    | Economic sector of employment                       |
| 49   | F11    | Job title   |
| 50   | F12    | Main work duties                                    |
| 51   | F13    | Gross monthly income                                |
| 52   | F14    | Kind of fringe/other benefit(s)                     |
| 53   | F15    | Size of the company/firm/organisation               |
| 54   | F16    | Geographical scope of the company/firm/organisation |





This part investigates the main characteristics concerning the current employment situation of the graduates. Special importance has been attached to relevant information about the contents of the professional occupation/work to connect them with the course of studies. The professional/contextual relation between higher education and employment is also a topic of the following but on the basis of respondent self-perception, whereas this part investigates data which, when connected with respondent statements concerning their studies (especially the professional main focus of their study) permit statements about the degree of matching between their professional occupation and the knowledge and abilities acquired during their studies.

In many countries, the graduates have an extra job beside their main occupation. For this extra work they often earn more money than they do with their official job. It is not possible to analyse this extra work in more detail in graduate surveys, as it is generally not officially allowed.

This part also requires attention to correct filter guidance as some graduates may not have been employed at all since completing their studies, or were perhaps unemployed at the time of the survey but employed before.

Questions concerning their employment situation should only be put to graduates who really are employed at the time of the survey

In some studies, these questions are also asked of graduates who are unemployed at the time of the survey but had been employed before. This requires that the correct reference group is identified for all statements, such as 'from all graduates, who..., X% are employed in the public sector' instead of simply saying 'from all (employed) graduates, X% are working in the public sector'.

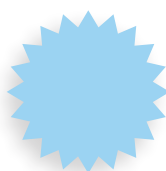
## 5.9. Module G: work requirements

**Table 35. Specimen questionnaire for Module G**

| Seq. number | Section number and title | Minimum questionnaire |           | Modules   |           |
|-------------|--------------------------|-----------------------|-----------|-----------|-----------|
|             |                          | Questions             | Variables | Questions | Variables |
| 7           | G Work requirements      | 1                     | 11        | 1         | 11        |

**Table 36. Subjects of Module G**

| Seq. | Number | Subject/topic         |
|------|--------|-----------------------|
| 55   | G1     | Required competencies |





This topic includes one question with 11 items.

The question concerns the self-perception of respondents, mainly regarding required non-professional competencies.

The execution of professional tasks requires not only the knowledge and abilities resulting from higher education but also 'non-professional' qualifications and orientations. To what extent the TVET/higher education institution teaches these 'non-professional' qualifications and orientations will differ between cases. It is also not known how these competencies can be produced or how they were produced. Many (such as persistence, determination) might have existed at the time the course of studies was commenced. Others might have been specially supported during the course of studies (as with economically effective thinking, ability to solve problems, innovativeness, self-confidence).

## 5.10. Module H: relationship between study and employment

The module 'relationship between study and employment' is very important for every tracer study. From this module the key indicators for match and mismatch of education and employment can be delivered. Respondents are asked to rate to what extent they use their acquired knowledge and skills ('horizontal match') and how appropriate their job is to their level of education ('vertical match'). If graduates are not working in a close link to their education they are asked for their reasons. All the questions in this module are subjective in the sense that the graduates are asked to evaluate their professional situation. Results of these subjective indicators of professional success should be analysed together with the objective indicators in module F.

**Table 37. Specimen questionnaire for Module H**

| Seq. number | Section number and title                    | Minimum questionnaire |           | Modules   |           |
|-------------|---|-----------------------|-----------|-----------|-----------|
|             |   | Questions             | Variables | Questions | Variables |
| 8           | H Relationship between study and employment | 6                     | 19        | 6         | 19        |

**Table 38. Subjects of Module H**

| Seq. | Number | Subject/topic   |
|------|--------|---|
| 56   | H1     | Utilisation of acquired knowledge and skills in the job |
| 57   | H2     | Appropriateness of field of study for the job           |
| 58   | H3     | Match of job and qualification/degree level             |
| 59   | H4     | Appropriateness of position to study                    |
| 60   | H5     | Reasons for not close related job                       |
| 61   | H6     | Evaluation of the usefulness of studies                 |



## 5.11. Module I: work orientation and job satisfaction

**Table 39. Specimen questionnaire for Module I**

| Seq. number | Section number and title                | Minimum questionnaire |           | Modules   |           |
|-------------|---|-----------------------|-----------|-----------|-----------|
|             |   | Questions             | Variables | Questions | Variables |
| 9           | I Work orientation and job satisfaction | 3                     | 32        | 4         | 49        |

**Table 40. Subjects of Module I:**

| Seq. | Number | Subject/topic                          |
|------|--------|--|
| 62   | I1     | Work orientations                      |
| 63   | I2     | Characteristics of employment and work |
| 64   | I3     | Planned job changes                    |
| 65   | I4     | Job satisfaction                       |

## 5.12. Module J: vocational education/ training before study at the TVET/ higher education institution

**Table 41. Specimen questionnaire for Module J**

| Seq. number | Section number and title  | Minimum questionnaire |           | Modules   |           |
|-------------|---|-----------------------|-----------|-----------|-----------|
|             |   | Questions             | Variables | Questions | Variables |
| 10          | J Vocational education/training before your study at the TVET institution | 3                     | 3         | 4         | 4         |

**Table 42. Subjects of Module J:**

| Seq. | Number | Subject/topic   |
|------|--------|---|
| 66   | J1     | Vocational training/post-secondary school courses before entering the TVET/higher education institution         |
| 67   | J2     | Kind of vocational training/post-secondary school courses before entering the TVET/higher education institution |
| 68   | J3     | Employment before TVET/higher education/training  |
| 69   | J4     | Duration of employment before TVET/higher education/training  |



### 5.13. Module K: further education after study at the TVET/higher education institution

This part, and those following, does not pursue the individual biography. Other TVET/higher education or higher education could have been completed before the course of studies covered by this questionnaire.

This chapter is about the main objective characteristics of a further higher education and the reasons for it. Interpreting the results and the education concept of the university requires consideration of the basic conditions for the specific profession in the respective country and the individual orientation of graduates.

In many ways, those graduates who completed other higher education are of interest: if they have completed a further course of study at a different university than the University of XY, they are equipped to make a basic comparison with their studies at the University of XY. In any case, they also ascribe professional success less directly to being an 'effect' of the course of studies at the University of XY than do the graduates who do not have any other higher education. It has to be considered that this group has less professional experience than other graduates and therefore their professional success, as far as it depends on the duration of the professional experience (such as promotion by merit), may initially be lower, even though they have more education.

**Table 43. Specimen questionnaire for Module K**

| Seq. number | Section number and title   | Minimum questionnaire |           | Modules   |           |
|-------------|--|-----------------------|-----------|-----------|-----------|
|             |  | Questions             | Variables | Questions | Variables |
| 11          | K Further TVET or higher education after study at the TVET institution | 2                     | 5         | 7         | 17        |

**Table 44. Subjects of Module K**

| Seq. | Number | Subject/topic                           |
|------|--------|---|
| 70   | K1     | Further studies/training                |
| 71   | K2     | Subject(s) of further studies/training  |
| 72   | K3     | Institution of further studies/training |
| 73   | K4     | Further studies/training                |
| 74   | K5     | Time of start of further studies        |
| 75   | K6     | Time of end of further studies          |
| 76   | K7     | Reasons for further studies             |





### 5.14. Module L: further vocational/ professional training

As with the questions on further higher education, the objective characteristics of further professional education will be highlighted. Both the educational concept of the TVET/higher education institution and the national basic conditions for graduate employment, plus individual orientations, have to be considered in interpreting the results.

The statements in this part also serve to provide important information about the need for further

professional education which may also be addressed to the TVET/higher education institution.

This part also follows the logic of the individual biography by picking out the training period after graduation.

In particular, it is interesting to find out to what extent and in what way graduates receive specific training/ education after graduation.

Interpretation of the results of this part depends largely on the education aims of the individual TVET/higher education institution.

**Table 45. Specimen questionnaire for Module L**

| Seq. number | Section number and title                   | Minimum questionnaire |           | Modules   |           |
|-------------|--|-----------------------|-----------|-----------|-----------|
|             |  | Questions             | Variables | Questions | Variables |
| 12          | L Further vocational/professional training | 2                     | 12        | 4         | 14        |

**Table 46. Subjects of Module L**

| Seq. | Number | Subject/topic                                      |
|------|--------|--|
| 77   | L1     | Further professional training after graduation     |
| 78   | L2     | Topics of received further professional training   |
| 79   | L3     | Subjects of received further professional training |
| 80   | L4     | Wished topics of further professional training     |

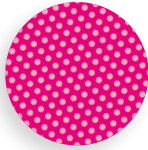
### 5.15. Module M: demographic information

This part focuses on the main individual characteristics of the graduates, such as year of birth and gender. There are some far-reaching assumptions about differences between graduate groups and these biographical characteristics; these are investigated in many graduate studies.

In some studies, this subject is much more differentiated than is proposed here. In Annex 2 we have included further questions which allow greater depth.

We recommend that these questions be placed at the end of the questionnaire as respondents may then understand more readily why these questions are asked. Also, they are easy to answer and this caters for any fatigue which may have developed in the course of the interview.

Some demographic variables can be found in almost all tracer studies.



**Table 47. Specimen questionnaire for Module M**

| Seq. number | Section number and title  | Minimum questionnaire |           | Modules   |           |
|-------------|---------------------------|-----------------------|-----------|-----------|-----------|
|             |                           | Questions             | Variables | Questions | Variables |
| 13          | M Demographic information | 2                     | 2         | 4         | 6         |

**Table 48. Subjects of Module M**

| Seq. | Number | Subject/Topic                        |
|------|--------|--------------------------------------|
| 81   | M1     | Gender                               |
| 82   | M2     | Year of birth                        |
| 83   | M3     | Highest level of education of father |
| 84   | M4     | Highest level of education of mother |

## 5.16. Module N: migration and regional mobility

**Table 49. Specimen questionnaire for Module N**

| Seq. number | Section number and title          | Minimum questionnaire |           | Modules   |           |
|-------------|-----------------------------------|-----------------------|-----------|-----------|-----------|
|             |                                   | Questions             | Variables | Questions | Variables |
| 14          | N Migration and regional mobility | 2                     | 4         | 6         | 11        |

**Table 50. Subjects of Module N**

| Seq. | Number | Subject/Topic                            |
|------|--------|--|
| 85   | N1     | Country of birth                         |
| 86   | N2     | Country of attending secondary education |
| 87   | N3     | Kind of school                           |
| 88   | N4     | Nationality                              |
| 89   | N5     | Country of residence                     |
| 90   | N6     | Region of residence                      |



## 5.17. Module O: further comments and recommendations

**Table 51. Specimen questionnaire for Module O**

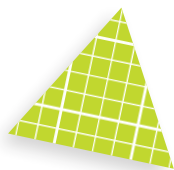
| Seq. number | Section number and title            | Minimum questionnaire |           | Modules   |           |
|-------------|-------------------------------------|-----------------------|-----------|-----------|-----------|
|             |                                     | Questions             | Variables | Questions | Variables |
| 15          | O Your comments and recommendations | 3                     | 3         | 7         | 11        |

**Table 52. Subjects of Module O**

| Seq. | Number | Subject/topic   |
|------|--------|---|
| 91   | O1     | Liked elements of study   |
| 92   | O2     | Not liked elements of study   |
| 93   | O3     | Recommended changes for the TVET/higher education institution/study programme |
| 94   | O4     | Comments/suggestions regarding the survey                                     |
| 95   | O5     | Comments/suggestions regarding the questionnaire                              |
| 96   | O6     | Time needed to fill in the questionnaire (minutes)                            |
| 97   | O7     | Evaluation of the questionnaire   |







## Chapter 6.

### Preparation of the data collection phase

#### 6.1. Overview

A tracer study cannot be done without a working team. Institutional tracer studies require the support of the management of the institution and collaboration with different departments.

The key element to be able to start the tracer study is an updated address database. In this chapter the necessary structure of the address database and the strategies of updating addresses are explained.

#### 6.2. Management and organisation

At the start of the field phase the internal organisation of the tracer study team should be fixed.

Prepare a team with the following functions:

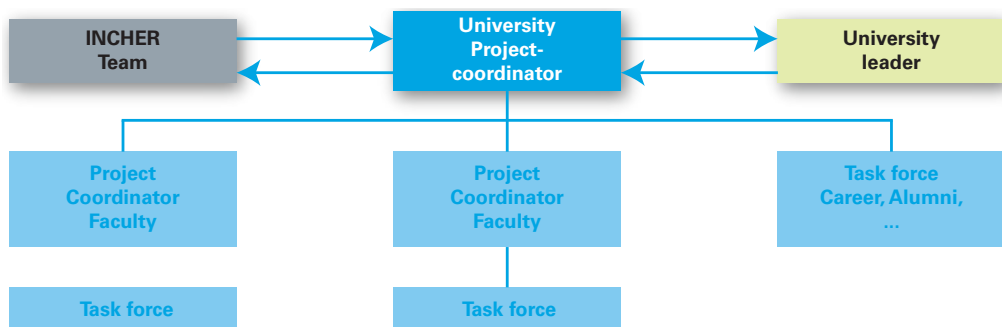
- (a) project coordinator (contact person);
- (b) team members (project management, IT, report writing, statistical analysis);
- (c) external partners.

Provide function, name, address, phone, e-mail.

This information should be published at the web site of the tracer study and also in other information material such as the tracer study flyer.

Figure 10 depicts the KOAB organisation at university level, which could be an example for institutional tracer studies.

Figure 10. Organisation of the German KOAB tracer studies at university level



#### 6.3. Before survey launch

Check if the address database is ready and how many valid e-mail addresses it contains.

The access codes (PINs) (as generated with QTAFI online) must be integrated into the address database. Every graduate in that database should have an individual access code (PIN) linking to the address database with the survey data database to send reminders (later) only to those who did not respond.

Write an invitation letter in which you write the web address of the survey and the individual access code (PIN) (from the address database).

The mail should be personalised (Dear Mr Adam). Many mail merge software solutions allow sending personalised mails including the individual PIN.

It is recommended that the invitation letter is signed by the leader of the department/school/university.



If the invitation letter is sent by conventional postal services it is useful to enclose a flyer with information about the survey (see the examples in Section 6.7).

### 6.4. Address database

The database should contain all information needed to contact the graduates. The starting point is the list of the names of all graduates belonging to the target population, for example all who graduated in 2012.

The database should also contain process information, such as:

- (a) if the address was updated;
- (b) how the address was updated;
- (c) where the address comes from;
- (d) when each graduate was contacted first (date);
- (e) how each graduate was contacted first (phone, e-mail).

This information is necessary to control (and also for report requirements) the whole process of sending questionnaires in several waves to the graduates.

**Table 53. Recommended content of the address database**

|  |  |
|--|--|
| All personal information   | <ul style="list-style-type: none"> <li>• name, address, date of birth, etc.;</li> <li>• study address/home address;</li> <li>• e-mail;</li> <li>• phone;</li> <li>• course of studies, degree(s);</li> <li>• PIN (login code for the online survey).</li> </ul>  |
| Meta information on address and address updating and other actions | <ul style="list-style-type: none"> <li>• address undeliverable;</li> <li>• address sent to registration office, etc.;</li> <li>• actual state (e.g. 'address was corrected, send now with corrected address');</li> <li>• what to do next? (e.g. 'new contact with first invitation letter');</li> <li>• what was already done? (e.g. 'address already corrected with facebook').</li> </ul> |
| Information on shipping  | <ul style="list-style-type: none"> <li>• last contact (up to four contacts);</li> <li>• address used for the last contact (in separate fields);</li> <li>• date of first shipping;</li> <li>• date of second shipping;</li> <li>• date of third shipping, etc.</li> </ul>  |
| Information on response  | <ul style="list-style-type: none"> <li>• kind of response (paper / online);</li> <li>• date of response;</li> <li>• willingness to participate in follow-up survey yes/no.</li> </ul>  |





Information for processes after the field phase:

- (a) a graduate wants to have a results report (yes/no);
- (b) a graduate who does not want to participate on other surveys in the future (yes/no);
- (c) new address (such as e-mail-address);
- (d) other aspects (such as want to have contact to the Alumni-club of the university or the faculty).

Procuring addresses might be a very difficult and time-consuming task where it is not possible to get the current addresses from an updated register.

Several methods are available:

- (a) sometimes it is necessary to collect the address information from sub units within an education institution (faculties or departments);
- (b) if addresses are not stored electronically they must be entered manually;
- (c) use addresses of the parents of the graduates (registration records);
- (d) use the media: announce the survey in the internet, newspaper, radio or TV and ask the graduates to contact you;
- (e) use Alumni associations, if available;
- (f) contact graduates via employers (like schools and universities and other known employers of graduates);
- (g) use the snowball technique: ask graduates for addresses of other graduates.

See the experiences of the tracer studies initiated by the Association of African Universities (AAU) (Mugabushaka et al., 2007).

The addresses, where collected, might no longer be valid. The more time that has passed from graduation to survey, the more the validity of addresses is in question.

The University of Indonesia developed a very systematic and successful method to update the addresses of all their graduates:

- (a) all graduates of the target population were called by students to announce the tracer study and to get a valid e-mail address;
- (b) the updated e-mail addresses were used in the field phase and resulted in an high response rate of more than 50%.

The use of snowball sampling is particularly appropriate in tracer studies. This involves initial contact to some graduates who are asked to provide addresses of their friends who also graduated with them. Facebook and other social networks can assist this process.

## 6.5. Tracer study web page

A web page should be provided for the tracer study to:

- (a) present the project to the graduates;
- (b) clarify questions;
- (c) direct graduates to the questionnaire (link to the online questionnaire).

The address of the web page should be short and simple.

Other functions of the web page:

- (a) presentation of the tracer study to the staff and students of the TVET/higher education institution;
- (b) presentation of the tracer study to external parties (parents, other institutions, government, mass media);
- (c) presentation of the results (when available).

Content of the web page:

- (a) what are the objectives of the tracer study?
- (b) who is involved?
- (c) who is handling it?
- (d) how does the survey data flow?
- (e) who is using the data?
- (f) how is the data protection done?
- (g) what happens in the project? Is the survey finished? When are results available?



## 6.6. Examples of tracer study web pages

Figure 11. Tracer study web page of the University Göttingen: invitation letter of the president of the university

**Georg-August-Universität Göttingen**  
The University | Faculties | Research | Studying | Institutions | Alumni | Service

Homepage | Info | Studienleistungen | Graduate surveys

### Graduate surveys: Degree and career experience

#### A quality assurance tool

One of the requirements for quality management in higher education is the consideration of different perspectives when trying to assure quality of teaching and learning. In this context, graduate surveys represent an inclusive tool for incorporating graduates' points of view.

The following issues were raised as part of the graduate surveys carried out by the University of Göttingen:

- How do graduates evaluate their studies in retrospect?
- In which professional and occupational fields do the graduates work?
- What is their experience of the transition from studying to professional work?
- Does their professional activity correspond to what they studied?
- How do graduates evaluate the acquisition of competences and their usefulness in a professional context?

The graduate surveys undertaken by the University form part of the national collaborative project "Study Conditions and Professional Success" of the International Centre for Higher Education Research (INCHER) in Kassel.

#### Utilisation of findings

The findings are used in different areas of higher education development as well as to improve services provided by the University and faculties.

[more...](#)

#### Erstbefragung

- Survey 2007 Exam Cohort
- Survey 2008 Exam Cohort
- Survey 2009 Exam Cohort
- Survey 2010 Exam Cohort
- Exam Cohort 2011
- **Current survey: 2012 Exam Cohort**

#### Folgebefragung

- **2008 Exam Cohort**

#### Findings

- Survey 2007 Exam Cohort
- Survey 2008 Exam Cohort
- Survey 2009 Exam Cohort
- [Results for CM \(internal link\)](#)

#### Further information

- [More about the quality assurance tool \(german\)](#)
- [More about the quality assurance tool \(english\)](#)
- [data protection](#)
- [INCHER](#)
- [Alumni Göttingen](#)

Contact:  
Teaching and Learning Quality Management  
Georg-August-Universität  
Göttingen  
Student and Academic Services  
Wilhelmplatz 2  
D-37073 Göttingen  
Tel. +49 (0)551 739-4888  
Fax +49 (0)551 739-104000  
[E-Mail](#)

Homepage | Info | Studienleistungen | Graduate surveys

Not only | Site info | Data Privacy Statement

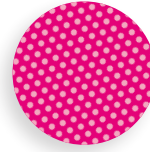


Figure 12. Tracer study web page of the University Göttingen: information about the participating faculties

The screenshot shows the website for the University of Göttingen, specifically a page for a tracer study survey. The header includes the university logo and navigation links: "The University", "Faculties", "Research", "Studying", "Institutions", and "Alumni Service". Below the header, there are navigation tabs: "Current survey", "Language", "Contact", "Previous results", and "Current survey". The main content area is divided into three columns. The left column contains contact information for Teaching and Learning Quality Management. The middle column contains the main text of the survey invitation, addressed to graduates, and includes a "Kind regards" signature from the President. The right column contains links to the online questionnaire, information about data protection and quality assurance, and contact details for the survey team.

**Georg-August-Universität Göttingen**  
The University | Faculties | Research | Studying | Institutions | Alumni Service

**Information about the current survey of the 2012 academic year**

Dear Graduate,

Recently you received an invitation to take part in this year's central survey of graduates by the University of Göttingen. Here you will find further information about the survey, an invitation from the President of the University, and access to the online questionnaire.

We depend on a high response rate in order to continue to obtain reliable results and thereby improve the quality of the degree programmes and conditions of study we offer, so please give us your support. This year we are inviting graduates who completed their degrees at the University of Göttingen between 1st October 2011 and 30th September 2012 (2011/12 winter semester and 2012 summer semester) to take part.

Kind regards,  
Ulrike Betsiegal  
Professor Dr. Dr. h.c. Ulrike Betsiegal  
President, Georg-August-Universität Göttingen

access to the online questionnaire

- Questionnaire initial survey 2012 Exam Cohort

informations

- Reasons to participate
- data protection
- More about the quality assurance tool (german)
- More about the quality assurance tool (english)
- FAQ
- Participating faculties

contacts

- BICHER
- Alumni

**Kontakt:**  
Teaching and Learning Quality Management  
Georg-August-Universität Göttingen  
Student and Academic Services  
Wilhelmplatz 2  
D-37073 Göttingen  
Tel. +49 (0)551 735-4000  
Fax +49 (0)551 739-184888  
E-Mail

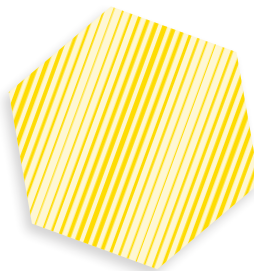




Figure 13. Tracer study web page of the University Göttingen: participating faculties



<http://www.uni-goettingen.de/Absolventenbefragung>



Figure 14. TVET Vietnam tracer study



<http://www.tvet-vietnam.org/index.php/en/news/40-general/270-vietnamese-german-cooperation-in-tvet-tracer-study-a-successfully-piloted-initiative>





## 6.7 Flyer with survey information

If a flyer is used, the key information of the tracer study should be presented to:

- (a) graduates;
- (b) students;
- (c) staff of the TVET/higher education institution;
- (d) mass media;
- (e) other stakeholders.

This wide audience will determine the number of copies required. Distribution to current students will advise them that they will be invited in the future to participate in the tracer study.

The flyer should inform about the:

- (a) background of the study;
- (b) objectives of the tracer study;
- (c) methods (kind of questionnaire);
- (d) schedule;
- (e) cooperation (if any);
- (f) publications (if any);
- (g) tracer study team;
- (h) contact to the tracer study team.

Figure 15. Example of a Flyer from the VALERA tracer study

**Publications**

Assouline, Chantal and Tröschel, Ulrike (2005) *Strategies to Support Mobility Within the European Union: Learning, Research, Evaluation, Innovation*. Ghent: Research in Education and Culture Series, no. 1000 (2005)

Edels, Barbara M., Mörsen, Friedhelm, Ober, Albert, Bött, Robert S., Rindler, Wolfgang and Tröschel, Ulrike (2005) *Assessing Europe through Cooperation among Universities: The Experience of the SOCRATES Programme*. London and Bristol, UK: J. Kingley Publishers

Krutz, Robert and Tröschel, Ulrike (2007) *ERASMUS-Studying English in the UK: 2000-2007*. Wiesbaden: Deutscher Fachschriften-Verlag

Mörsen, Friedhelm and Tröschel, Ulrike (1999) *Students in Flux: The Experience of German ERASMUS Studies*. London and Bristol, UK: J. Kingley Publishers

Mörsen, Friedhelm and Tröschel, Ulrike (2000) *Study Abroad and Early Career: Experiences of Former ERASMUS Studies*. London and Bristol, UK: J. Kingley Publishers

Mörsen, Friedhelm and Tröschel, Ulrike (2007) *The Science Graduate: Impact Analysis of the Science Graduate Research Project Learning, Office for International Publications of the European Communities*

Mörsen, Friedhelm and Tröschel, Ulrike (2007) *Succession Following ERASMUS: The Experiences and Views of the Follow-up (Two Generational Succession) Learning Office for International Publications of the European Communities*

Schubert, Rainer and Tröschel, Ulrike (2005) *Higher Education and Graduate Employment in Europe: Results of Graduate Surveys from 12 countries*. Deutsche Forschungsgemeinschaft (DFG), German Research Foundation

Tröschel, Ulrike, (ed.) (2002) *ERASMUS in the UK: 2000-2001 Programme: Analysis of an Evaluation Study*. Bonn: Lantana

Tröschel, Ulrike and Özkan, İsmail (2005) *Higher Education and Graduate Employment (Special Issue)*. *European Journal of Education*, 20(2)

Tröschel, Ulrike and Özkan, İsmail (2005) *Mobility and Cooperation in Education: Recent Experiences in Europe (Special issue)*. *European Journal of Education*, 20(4)

**WZI**  
The Centre for Research on Higher Education and Work (WZ) is an interdisciplinary research unit of the University of Kassel, Germany. It is one of the world's key institutions for research on higher education. The project team has undertaken various evaluation studies of the SOCRATES programme and other EU programmes. The Centre is specialised in systems of higher education, higher education and employment, academic staff evaluation as well as international cooperation and mobility. Ulrike Tröschel and Ingrid Schönborg were also coordinators of an international comparative study on employment and work of 36 000 graduates in 11 countries.

**GES**  
GES (Association for Empirical Studies) is a private research institute mainly concerned with issues in the field of higher education and the subsequent work of highly skilled employees. Special focus is on the internationalisation of higher education. In this area GES has conducted numerous evaluation studies on mobility and training programmes of the European Union like ERASMUS, SOCRATES, TEMPUS etc.

**Contact**  
Contact: Christmann  
Wissenschaftszentrum für Sozialforschung (WZ) | Universität Kassel | Mönchebergstr. 17 | 34109 Kassel | Germany  
☎ +49(0)561 804-2400 (Christmann)  
☎ +49(0)561 804-2410 (Schönborg)  
☎ +49(0)561 804-3415  
✉ info@valera.org  
Web: <http://www.valera.org>

**ValERA**  
The Professional Value of ERASMUS Student and Staff Mobility

General Evaluation of Outcomes of ERASMUS Projects on Students' Access to Employment and Career Development, on Teachers' Career Development and on the Impact of Studies in the Workplace

**Project Information**

**GES**  
Gesellschaft für Empirische Sozialforschung  
Wissenschaftszentrum für Sozialforschung

**WZ**  
Wissenschaftszentrum für Sozialforschung  
Universität Kassel





## VolERA The Professional Value of ERASMUS Student and Staff Mobility

### Background

ERASMUS is the higher education action of SOCRATES II programme. It aims to enhance the quality and reinforce the European dimension of higher education by encouraging transnational cooperation between universities, and providing European mobility.

Student mobility is not only considered important for the learning process within the framework of higher education, but it is also expected to have a positive impact on life and career after graduation and on professional integration. It is also likely that ERASMUS mobility has an impact on the educational standard of students arriving at the labour market and, consequently, on the performance of the European economy and the objectives of the Lisbon Summit.

Teachers' mobility, on the other hand, is expected to contribute to students' learning and to raise the development of the department as well as the improvement of teaching and curricula. However, temporary teaching at another European university might have a direct and visible professional performance as well. Therefore, our project expects a positive impact of ERASMUS involving staff mobility on the careers of the teachers.

### Objectives

The objective of this project is therefore to evaluate:

- the professional impact of ERASMUS student mobility on students' transition to employment and career development;
- the professional impact of teaching in another country on the framework of ERASMUS on teachers' career development in 20 European countries participating in the ERASMUS programme.

### Methods

We assume that the professional value varies substantially and improvements of the ERASMUS programme can be expected in the future by taking into account the major determinants of success.

Two surveys will be undertaken in order to collect information from the key persons:

- a questionnaire survey of former ERASMUS students;
- a questionnaire survey of former ERASMUS teachers.

In order to establish the views and expectations of other actors regarding the professional value and its success, the evaluation study will be complemented by:

- a questionnaire survey of university leaders;
- a questionnaire survey of employers;
- experts' and actors' opinions on ERASMUS mobility.

**Time Period:** January 2005 till March 2006.

**30 Countries:** The 25 member states of the EU, the candidate countries Bulgaria and Romania and the EEA countries Iceland, Liechtenstein and Norway.

### Work Schedule

- First Phase**  
(Jan. - Dec. 05)
- Survey with former mobile students, formerly mobile teachers, university leaders and employers;
  - Actors' and experts' report;
  - Invited expert seminar.
- Second Phase**  
(Jan. - Dec. 05)
- Interviews with in-pairs and actors in selected study areas;
  - Detailed analysis of surveys;
  - Final report.
- Third Phase**  
(Jan. - March 06)

### Team

The evaluation study is coordinated by the Centre for Research on Higher Education and Work (WZL) in Cooperation with the CES (Association for Empirical Studies).

**Team members WZL**  
Project coordination: Prof. Dr. Ulrich Teichler

**Project coordination and research**  
Dr. Udo Eickenshoff  
Dr. Sonja Witzel

**Research**  
Oliver Blaudt, M.A.  
Konstanz Eickenshoff, M.A., M.Ed.  
Constanz Obermann, M.A.  
Adrian Tjebk

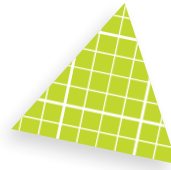
**Team members CES**  
**Research**  
Dr. Sus. Friedelike Malzer  
Adrian Oprel, M.A.



## 6.8. Checklist for data collection

The following items could form a part of a checklist:

- (a) collect information about the target population (number of graduates by study programme and gender; per cent and number)
- (b) create tables about the target population;
- (c) qualification/degree of graduates of 2012 of the TVET/higher education institution, by gender (per cent and number);
- (d) collect the addresses of the target population;
- (e) are addresses of all members of the target population available? If not, what are the reasons?
- (f) Are all addresses updated? If not, how many are updated? In which way was the updating done?
- (g) technical implementation of address management is done and tested (how to do mail merge, how to print labels);
- (h) create the text for all invitation letters to graduates including the signature(s);
- (i) should incentives be used?
- (j) prepare the project homepage with the link to the online survey;
- (k) provide further information materials (flyers, additional letter from other important people, such as the vice chancellor);
- (l) relevant people (career service, alumni service) should be informed;
- (m) staff (student assistants) is available.



---

## Chapter 7.

### Activities during the data collection phase

#### 7.1. Overview

To be able to improve the data collection in the future it is important to document this phase, preferably daily.

In this phase the data entry and the statistical analysis can start. This includes a first check of the incoming questionnaires and preparation of data entry and analysis. The development of a codebook is an essential step in this phase, as explained in this chapter.

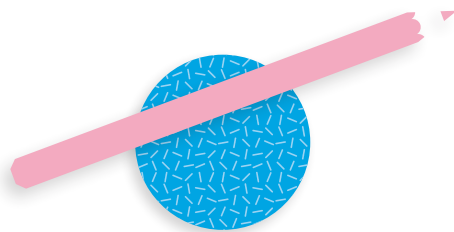
#### 7.2. Documentation of the field phase

All activities during the field phase should be documented in a way that it can be easily included in the methodology chapter of the final report.

#### 7.3. Daily activities for handling paper questionnaires

A clear step-by-step guide should be followed for handling paper questionnaires. The following uses a guide prepared for the KOAB tracer studies to give some indications about the different tasks:

- (a) collect the questionnaires from the institution post office every day;
- (b) bundle the questionnaires from that day.
- (c) write on the top of the bundle the date ( return date). This date should be later also entered in the questionnaire data file;
- (d) count the number of returned questionnaires and enter this number in an Excel sheet (for the return statistics);
- (e) open the envelope of one returned questionnaire;
- (f) check the questionnaire: is it answered? Only questionnaires which are answered to a specified extent (at least the parts A + B + C + D + E) should be counted as returned questionnaires;
- (g) a label with the simple identification (sequence) number (such as 001 ... 399) should be put on the upper right side of the cover page of the questionnaire. The first questionnaire is given the number '001' and so on. This ordering system is the most easy and efficient and allows later retrieval of the questionnaire very easily. To use labels for numbering helps to avoid double numbering which always happens if the numbers are written manually (handwriting). All labels required should be printed before the start of the field phase; where graduates provide addresses, a copy of the label should also be put on the slip with the address;
- (h) the fact that a graduate has sent back a questionnaire together with the date of return should be entered in the address databank. If the questionnaire is sent back without name and address the name cannot be used as a link between address database and questionnaire. Experience shows that the best way is to send a PIN (personal identification number) with the invitation letter which can also be used to enter the online questionnaire (login code) (see Figure 16);
- (i) if the graduate entered their name and address on a slip at the end of the questionnaire, the slip has to be removed from the questionnaire to protect privacy. Personal data, such as name and address, should never be stored together with the data/ answers from the questionnaire, otherwise the answers are not anymore anonymous. The slips with labels should immediately be stored in a safe (locked) place, which has no open access. Personal data should never be stored on a computer connected to the internet;
- (j) aggregated numbers should be entered in the EXCEL sheet (response statistics);
- (k) the first 10 days after the sending of an invitation letter are the most interesting. Return statistics for the tracer study team should be produced every day, and discussed in the team meeting.



**Figure 16. Text element for the cover page of the paper questionnaire**

We have prepared two versions of this questionnaire for you to choose from: an online version and this paper version.

If you want to fill in the paper questionnaire, please enter the PIN code from the invitation letter in the box below so that we can delete it from the online survey.

## 7.4. Response statistics

### Gross response rate

The gross response rate is the proportion of graduates from the target population who participated in the survey, regardless of:

- (a) whether an address existed;
- (b) whether the existing address (es) was/were valid;
- (c) whether a valid address could be found.

**Table 54. Example for calculation of the gross response rate**

|                            |            |
|----------------------------|------------|
| Total number of graduates  | 1 000      |
| Number of respondents      | 500        |
| <b>Gross response rate</b> | <b>50%</b> |

The gross response rate informs about the success of the survey better than response rates adjusted to the problems of address quality.

### Net response rate

For the calculation of a net response rate we need to know how many valid addresses we have (number of graduates who really received an invitation to participate).

**Table 55. Example for calculation of the net response rate**

|   |            |
|---|------------|
| Total number of graduates                       | 1 000      |
| Number of respondents (returned questionnaires) | 500        |
| Number of addresses                             | 900        |
| Number of undelivered questionnaires            | 55         |
| Total number of valid addresses                 | 845        |
| <b>Net response rate</b>                        | <b>59%</b> |

**Table 56. Example of response rate for the XYZ tracer study**

|   |            |
|---|------------|
| Total number of graduates of the year 2013                | 1000       |
| Total number of addresses from graduates of the year 2013 | 900        |
| Undeliverable questionnaires                              | 55         |
| Number of persons reached / adjusted population           | 845        |
| Responses (returned questionnaires)                       | 500        |
| <b>Gross response rate</b>                                | <b>50%</b> |
| <b>Net response rate</b>                                  | <b>59%</b> |

**Table 57. Example of response statistics**

| <b>Returned questionnaires: tracer study of the TVET/higher education institution 2014</b> |            |                                   |                                     |                                  |                                |                |                       |
|--|------------|-----------------------------------|-------------------------------------|----------------------------------|--------------------------------|----------------|-----------------------|
| Number of graduates:   |            |                                   |                                     | 1 000                            |                                |                |                       |
| Number of updated (valid) e-mail addresses:  |            |                                   |                                     | 800                              |                                |                |                       |
| Days   | Date       | Number of returned questionnaires | Cumulative number of questionnaires | Cumulative gross return rate (%) | Cumulative net return rate (%) | Remarks        | Number of invitations |
| 1  | 01.10.2014 | 40                                | 40                                  | 4                                | 5                              |                | 800                   |
| 2  | 02.10.2014 | 50                                | 90                                  | 9                                | 11                             |                |                       |
| 3  | 03.10.2014 | 20                                | 110                                 | 11                               | 14                             |                |                       |
| 4  | 04.10.2014 | 15                                | 125                                 | 13                               | 16                             |                |                       |
| 5  | 05.10.2014 | 11                                | 136                                 | 14                               | 17                             |                |                       |
| 6  | 06.10.2014 | 12                                | 148                                 | 15                               | 19                             |                |                       |
| 7  | 07.10.2014 | 8                                 | 156                                 | 16                               | 20                             |                |                       |
| 8  | 08.10.2014 | 4                                 | 160                                 | 16                               | 20                             |                |                       |
| 9  | 09.10.2014 | 5                                 | 165                                 | 17                               | 21                             |                |                       |
| 10   | 10.10.2014 | 3                                 | 168                                 | 17                               | 21                             |                |                       |
| 11   | 11.10.2014 | 2                                 | 170                                 | 17                               | 21                             |                |                       |
| 12   | 12.10.2014 | 0                                 | 170                                 | 17                               | 21                             |                |                       |
| 13   | 13.10.2014 | 1                                 | 171                                 | 17                               | 21                             |                |                       |
| 14   | 14.10.2014 | 2                                 | 173                                 | 17                               | 22                             |                |                       |
| 15   | 15.10.2014 | 0                                 | 173                                 | 17                               | 22                             |                |                       |
| 16   | 16.10.2014 | 30                                | 203                                 | 20                               | 25                             | First reminder | 627                   |



|    |            |    |     |    |    |                    |     |
|----|------------|----|-----|----|----|--------------------|-----|
| 17 | 17.10.2014 | 25 | 228 | 23 | 29 |                    |     |
| 18 | 18.10.2014 | 15 | 243 | 24 | 30 |                    |     |
| 19 | 19.10.2014 | 12 | 255 | 26 | 32 |                    |     |
| 20 | 20.10.2014 | 10 | 265 | 27 | 33 |                    |     |
| 21 | 21.10.2014 | 8  | 273 | 27 | 34 |                    |     |
| 22 | 22.10.2014 | 5  | 278 | 28 | 35 |                    |     |
| 23 | 23.10.2014 | 7  | 285 | 29 | 36 |                    |     |
| 24 | 24.10.2014 | 3  | 288 | 29 | 36 |                    |     |
| 25 | 25.10.2014 | 2  | 290 | 29 | 36 |                    |     |
| 26 | 26.10.2014 | 1  | 291 | 29 | 36 |                    |     |
| 27 | 27.10.2014 | 2  | 293 | 29 | 37 |                    |     |
| 28 | 28.10.2014 | 1  | 294 | 29 | 37 |                    |     |
| 29 | 29.10.2014 | 0  | 294 | 29 | 37 |                    |     |
| 30 | 30.10.2014 | 1  | 295 | 30 | 37 |                    |     |
| 31 | 31.10.2014 | 0  | 295 | 30 | 37 |                    |     |
| 32 | 01.11.2014 | 20 | 315 | 32 | 39 | Second reminder    | 505 |
| 33 | 02.11.2014 | 20 | 335 | 34 | 42 |                    |     |
| 34 | 03.11.2014 | 12 | 347 | 35 | 43 |                    |     |
| 35 | 04.11.2014 | 10 | 357 | 36 | 45 |                    |     |
| 36 | 05.11.2014 | 8  | 365 | 37 | 46 |                    |     |
| 37 | 06.11.2014 | 7  | 372 | 37 | 47 |                    |     |
| 38 | 07.11.2014 | 5  | 377 | 38 | 47 |                    |     |
| 39 | 08.11.2014 | 8  | 385 | 39 | 48 |                    |     |
| 40 | 09.11.2014 | 5  | 390 | 39 | 49 |                    |     |
| 41 | 10.11.2014 | 2  | 392 | 39 | 49 |                    |     |
| 42 | 11.11.2014 | 3  | 395 | 40 | 49 |                    |     |
| 43 | 12.11.2014 | 1  | 396 | 40 | 50 |                    |     |
| 44 | 13.11.2014 | 2  | 398 | 40 | 50 |                    |     |
| 45 | 14.11.2014 | 0  | 398 | 40 | 50 |                    |     |
| 46 | 15.11.2014 | 1  | 399 | 40 | 50 | End of field phase |     |



Figure 17. Example of returned questionnaires by date (number)

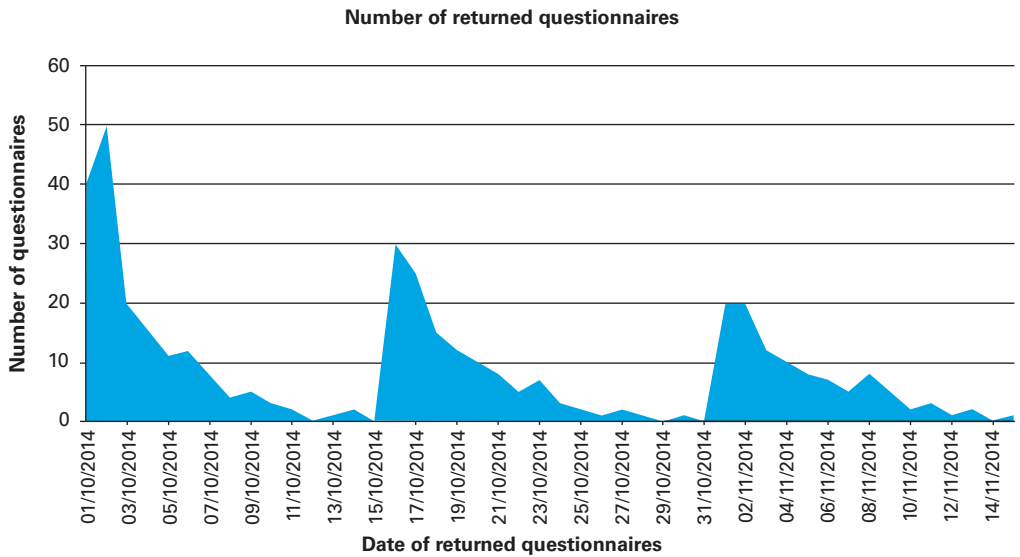
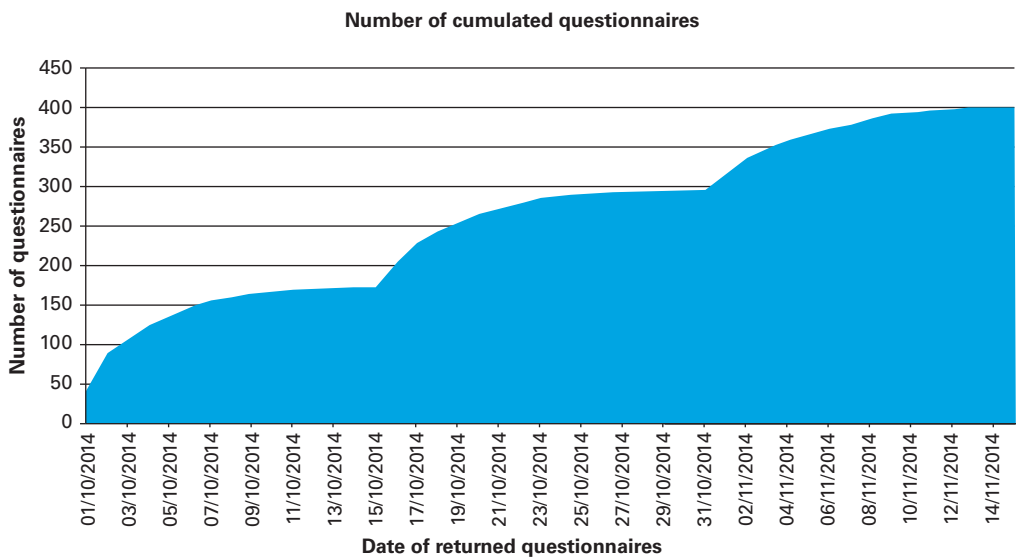


Figure 18. Example of returned questionnaires by date (cumulative number)



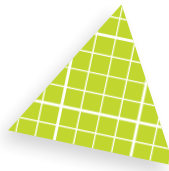
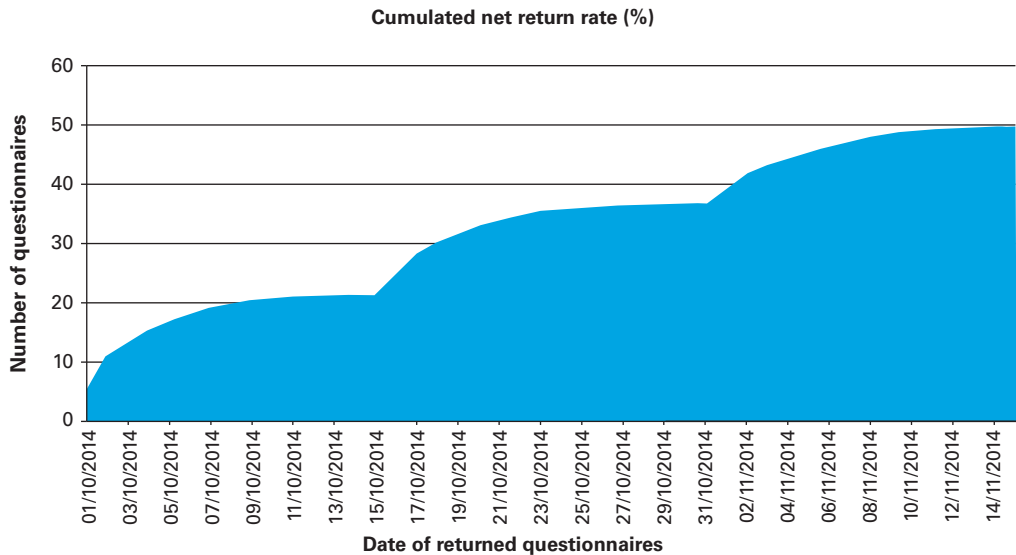


Figure 19. Net return rate by date (cumulative %)



## 7.5. Control of returned questionnaires

Checking the returned questionnaires can partly be understood as a preparatory step for the data entry.

We recommend not only collecting the returned questionnaires, but checking them with regard to the five following criteria:

### (a) target group:

Has the questionnaire been completed by a member of the target group? This check is especially important as it is easily possible that the addresses received are not the ones actually wanted. This period of the survey implementation offers the opportunity to correct these mistakes. Questionnaires which were not completed by members of the target group are left out of the survey (no data entry) but they are counted for the proportion of returns;

### (b) completeness:

Some questionnaires may not be completed properly without being given a good reason for this (such as unemployment). These questionnaires are generally left out of the survey, too, but are counted for the proportion of returns;

### (c) seriousness:

It is not easy to describe how to check whether the completion of the questionnaire has been done seriously. With the responses/the long list of items for the question with a five-point scale, for example, lack of seriousness may be supposed if a plausible pattern for the ticked responses cannot be seen. This check can be very time-consuming if it is done systematically and it is difficult to understand why respondents should bother purposely to give foolish answers. Therefore, we recommend only a casual check for signs of lack of seriousness at first.



However, during the process of data analysis is it possible to do this kind of check more systematically;

(d) clarity and consistency of answers:

This is the most time-consuming step in checking the questionnaires. It can happen that respondents do not keep to the rules given in the questionnaire:

- (i) even though they are asked to tick one item only, you will find two items being marked;
- (ii) some interviewees may tick 'other' without ticking the corresponding box;
- (iii) for a five-point scale, you may find two ticks in one line or a tick between two boxes.

In all these cases it is necessary to correct the statements of the interviewees to enable the data entry;

(e) open numerical answers:

Leading zeros do not necessarily have to be filled in, but during the check attention has to be paid to the fact that all statements can be captured correctly. All more than two-figure numbers (such as income or number of employees) have to be checked to see that they are captured correctly.

(a) daily collection of paper questionnaires and/or download of online questionnaires;

(b) daily response statistics (Excel sheet);

(c) daily update of the address database;

(d) first check of the questionnaire (filled in?);

(e) coding of open answers possible;

(f) data entry of paper questionnaires.

If the addresses are not updated before the start of the field phase the process becomes much more complicated. If update is done in combination with the first mail-out, those addresses which have been updated (such as by snowball technique) do not have the status of 'first invitation'. It is recommended to staple all updated addresses until the next date for a mail-out. The whole process of the field phase should then be prolonged by 14 days. If the process of updating addresses continues, further prolongation is necessary because all graduates should receive the same number of invitations.

## 7.6. Reminder actions

Reminder actions are the most powerful measures to increase response rate. Experience from many tracer studies recommends that at least two reminder actions should be undertaken.

If the addresses are updated before the start of the field phase, mail-out then should proceed as in Figure 20. Incoming questionnaires should be processed as described:

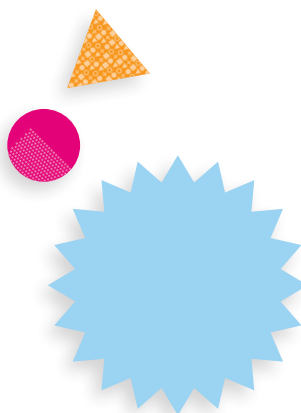
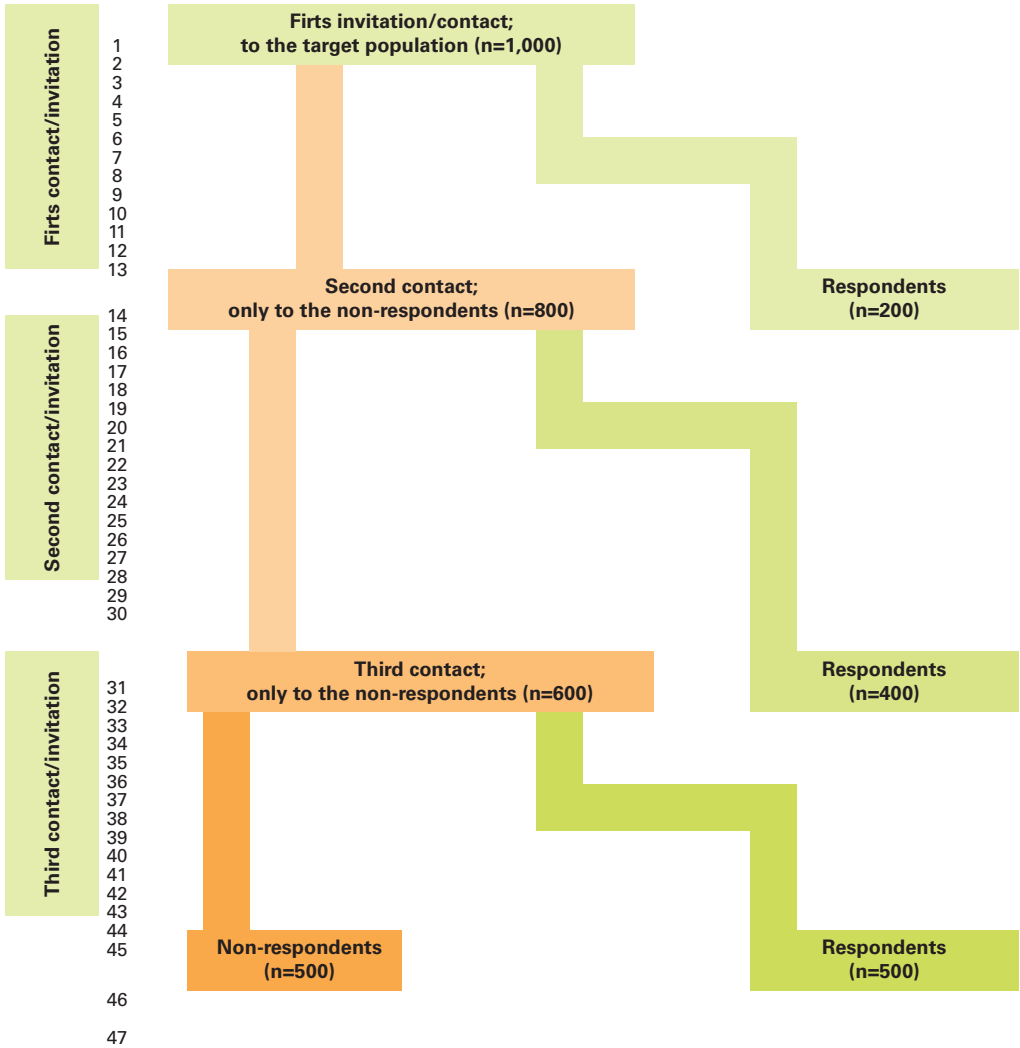
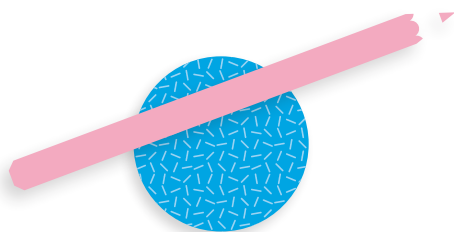






Figure 20. Schedule of invitations/contacts





## 7.7. Helpdesk

During data collection, graduates might have questions regarding the tracer study in general or specifics of the questionnaire. Technical problems might occur if an online survey is used.

A helpdesk is needed and the contact details should be given to the graduates

- (a) in the invitation letter;
- (b) in the flyer about the tracer study;
- (c) in the paper questionnaire;
- (d) in the online questionnaire.

The helpdesk is intended to provide respondents with information and guidance, and should also provide support in solving technical problems (troubleshooting), for example in case of damaged paper questionnaires or access problems to the online questionnaire.

## 7.8. Daily backup/download of online data

Backup of the online questionnaire system should be done every day. The installation of the questionnaire and the database with responses should be downloaded from the server of the tracer study and stored on the local computer.

Backups should also be done regularly on another medium (USB stick) and stored at a safe place separate from the computer room.

## 7.9. Data entry of paper questionnaires

The data entry of paper questionnaires can start during the field phase.

## 7.10. Measures for obtaining a high participation

The success of the survey process is mainly measured by the number of returns: the smaller the number of graduates who refuse to complete the questionnaire, the higher the proportion of returns.

A high proportion of returns is very important when the actual number of graduates questioned is low.

For written graduate surveys, the proportion of returns is mostly between 30 and 60%; for employer surveys it is nearly always much lower.

In a written survey, the proportion of returns can be increased through sending reminders. Send a second reminder with another questionnaire and a stamped return envelope about four to five weeks after the first dispatch to those graduates who have not responded by then.

A complete postal survey cycle including three dispatch actions takes at least two months, independent of the number of people approached. With interviews, the duration of the process depends very much on the local/regional conditions so no general timing indications can be given.

## 7.11. Training of survey staff

Where other people are involved in the implementation of the survey, it is necessary to organise a training course for them. Form and content of the training course depend on the kind of participation of such people.

For postal questionnaire dispatch, only the appropriate technical indications concerning the dispatch action are required.





For a personal delivery of the questionnaire (interviews), all staff members must be very well informed about the study and know the questionnaire perfectly. The interviewer will be asked often to explain the objectives of the study and to give explanations and help in responding to individual questions. Interviewers can influence the results of the study and while such influence cannot be avoided, it has to be an objective of the training to control this influence. All staff members must have the same knowledge of the study and follow the same rules when doing the interview.

A one-day training course for all those interested in participating in the implementation of the survey should suffice. Information on the objectives of the study and the questionnaire should be distributed to trainees in advance.

If other people take part in implementing the survey, make sure they are well trained.

## 7.12. The codebook

When the data collection is in progress, preparations for data entry and coding can begin.

This task requires an instruction manual called 'codebook'. Even if entering your data directly with Excel or SPSS (in a kind of spreadsheet) or if someone else is doing the job, a codebook must be prepared. There are no formal requirements for a codebook apart from that anybody who reads the codebook should be able to understand how the information given in the questionnaire is transferred into the data file (7).

A codebook provides information on the structure, contents, and layout of a data file.

While codebooks vary widely in quality and amount of information given, a typical codebook includes:

- (a) response codes for each variable;
- (b) codes used to indicate non-response and missing data;
- (c) exact formulation of questions and answers;
- (d) skip patterns (filters) used in a survey;
- (e) other indications of the content and characteristics of each variable.

Codebooks may also contain:

- (a) frequencies of response;
- (b) survey objectives;
- (a) concept definitions;
- (b) a description of the survey design and methodology;
- (c) a copy of the survey questionnaire;
- (d) information on data collection, data processing, and data quality.

## 7.13. Recommendations and rules for coding and data cleaning

### Code lists

As a general rule, code as detailed as possible. Later the data can be aggregated at a higher level. The national statistics agency or the relevant institution can provide rules to transform the national codes into international codes, such as for job titles, economic branch, field of study.

For example, if it is said that the code for 'field of study' has two digits, then two digits are the highest

<sup>7</sup> For a clarification of the general concept of a 'codebook' see ICPSR, Inter-university Consortium for Political and Social Research: find an analyse data: *what is a codebook*: <http://www.icpsr.umich.edu/icpsrweb/ICPSR/support/faqs/2006/01/what-is-codebook> [accessed 8.10.2014].



possible aggregation; it is strongly recommended that the national codes are more differentiated.

The code lists should be included in the codebook, or a reference has to be given.

### Missing values

We propose to use the following values for missing values. They are all outside the normal value range.

- (a) -1 = 'question not asked'
- (b) -2 = 'drop-out'
- (c) -3 = 'outside the plausible value range'
- (d) -8 = 'filtered (not applicable)'
- (e) -9 = 'no answer'

### Scales

When more than one box is ticked, and the ticked ones are neighbours, then take the more extreme one, for example if '1' and '2' have been ticked, take '1'.

In all other cases, enter the mean value, for example if '4' and '2' are ticked, enter '3'.

### Imputations

Blanks and missing entries should be imputed as far as possible. The imputations should be documented well. But do not impute blanks with '0'.

### Multiple responses

Only ticks should be coded, with a '1'.

After data entry, if at least one item of a list of items was ticked, the ones not ticked will be recoded into '2' ('No'). If no item at all is ticked, the blanks will be recoded into '9' ('Missing').

**Figure 21. General rules for checking the questionnaires**

| . | Rule  | Example   |
|---|---|---|
| 1 | All corrections and remarks are to be done with a <b>red pencil</b> (or with a pencil in another contrasting colour, if the questionnaire is filled in with a red one). |   |
| 2 | Deletions are to be done by two parallel slashes.   |   |
| 3 | On the front page of the questionnaire an abbreviation of the name of the person having checked the questionnaire has to be stated                                      |   |
| 4 | In case of scales: if two values are ticked, one has to be deleted. As a rule, the more extreme value counts  | e.g. on a scale of 5 the 1 and 2 are ticked = 1 is the valid value  |
| 5 | Entries have to be done on the check sheet.   | such as: 'Answer to question 5 is unclear'                          |
| 6 | Replies under the category 'other' have to be classified under the given categories, if possible.   |   |
| 7 | Unclear figures/numbers have to approximate. All figures have to be controlled (e.g. question 25) and, if necessary, must be corrected.                                 | e.g. 2-3 persons becomes 3 persons – figures are to be approximated |



## Chapter 8. Data analysis

### 8.1. Overview

This chapter deals with the different types of problems connected with quantitative data analysis. Data entry and control are prerequisites of the statistical data analysis (in the narrow sense of meaning: the data analysis). The data analysis is a very important step in the tracer study; without it, the objectives of the tracer study cannot be achieved.

Even if the data analysis is done by experts (such as from university statistical departments) it is recommended to read the following chapter to be able to appraise the results of the processes.

This chapter provides also some basics in qualitative data analysis (see Sections 8.4-8.6).

### 8.2. Data analysis software

#### SPSS

SPSS is the most used and best documented software for statistical data analysis. It is easy to learn. For educational institutions special offers are available with relative low prizes (IBM SPSS Statistics with the C Tables and Tables modules). For the tracer studies we recommend to use SPSS or R.

#### EXCEL

It is not recommended to plan to do the data analysis with Excel, but some analysis can be done with it. A handbook is available which introduces the use of Excel for the data management and analysis of a tracer study (Ehlert and Kluge, 2011). The Swiss organisation Helvetas developed an Excel-based tool-kit for tracer studies which is free of charge and can be downloaded.

#### STATA

STATA, alike SPSS, is widespread in the social sciences. It has similar statistical functions, but it is much cheaper.

#### R

R is a very powerful open source software which allows to do all necessary data analysis of the tracer study without any costs<sup>8</sup>.

### 8.3. Data entry for paper questionnaires

Before beginning data entry, it is necessary to decide how to handle open questions requiring text answers such as job title, and suggestions for improvements.

The following are possible:

- capture all responses to open questions ('text file') and code them. Then all numerical data (for the open and the closed questions) ('raw data');
- capture all responses to closed questions ('raw data1') and then all responses to open questions ('text file'). After having coded the open responses, capture the new numerical data ('raw data2');
- as in the previous paragraph, capture all responses to closed questions ('raw data') and then the responses to open questions ('text file') without coding them.

Data entry can be assigned to professionals but the study team can contribute substantially to the quality of the data should take part in data control. Data analysis could also be done by professionals but it is imperative to have fundamental knowledge to understand and interpret the results of the statistical analysis.

We especially recommend drawing up an extensive table volume. This will offer the ability to insert selected tables directly into the final report.

This manual does not offer a detailed introduction into the procedures and problems of data analysis. Depending on the extent of survey team involvement in this, it may be necessary to consult the SPSS manual.

<sup>8</sup> Much information about R is available in internet, for example: *The R project for statistical computing*: <http://www.r-project.org/> [accessed 8.10.2014].



## 8.4. Coding

Nearly all questions in the graduate questionnaire include response items which already are coded, i.e. codes (figures) are assigned to each of them. For the later data analysis they can be entered directly.

### ASCII/ text data entry

For this data entry type, columns should indicate (for each question, respective to each response item) the position on the card where the codes have to be entered.

Up to a few years ago, punch cards (containing exactly 80 columns) were mainly used as data carrier; nowadays magnetic tapes or diskettes are used for data entry and do not limit the number of columns. However, there are still many reasons why data entry, even on modern data carriers, should be done according to the principle used for punch cards:

- (a) even on screens, a maximum of 80 characters can be shown side by side (columns);
- (b) code sheets get unwieldy if they contain more than 80 columns.

### Coding of open questions

However, for some questions response items are not given and for others there are possible supplementary response items (such as 'other').

Quantitative analysis presupposes that figures have to be assigned to the responses by established rules (which have to be included/have to be recognisable in the codebook). The assignment of figures to answers is called coding.

The codes (figures which have to be captured) may either be entered in the questionnaire (on the margin) or on a separate sheet (the so-called code leaf or code sheet). However, for data entry it has to be indicated, additionally, in which column (and on which card) data entry is carried out or in which 'field' of a data bank the information has to be entered.

However, the aim is to achieve a situation in which the results of the data analysis – for example the tables produced – contain not only the 'bare figures' but also a description of the figures. The codebook enables this kind of 're-translation' and is therefore a main aid during data analysis.

In the data analysis we regard the responses of the interviewees as values of variables. By using the name of the variable included in the codebook we refer to individual questions or response items.

We recommend creating names for variables by a simple scheme which will have considerable advantages for data control and further data management.

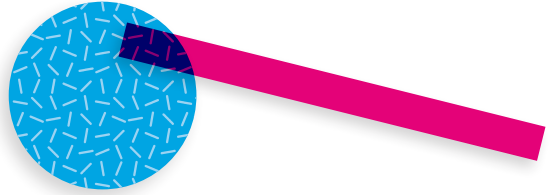
## 8.5. Rules for names of questions and variables

All variable names of the same survey should begin with a letter and contain an indication of the question (ID) and the item; for example the variable 'group work' from question C1 below may have the name V19\_1 (Variable 19, item 1).

It is recommended for technical reasons to use both the question number ('C1') which refers to the section of the questionnaire, and a question sequence number ('Q19').

The number 'C1' makes it easy to find the question in the questionnaire. The ID number 'Q19' allows reidentification of the same question, which might be placed in different places in questionnaires of different TVET/higher education institutions or in different surveys of the same institution.

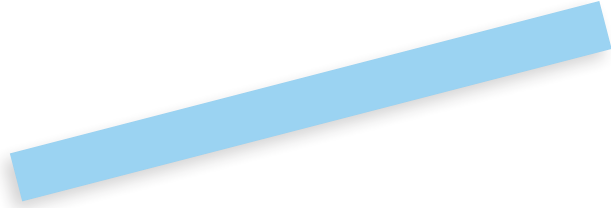
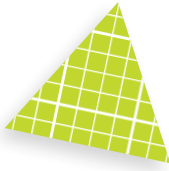
We propose including the variable names and the identification number of the question as per the questionnaire, as can be seen below. For questionnaire printing, the variable names are formatted to be 'hidden', not printed/visible but still in the questionnaire. This means the questionnaire already has the most important information of a codebook.



| NU023/<br>OR | <b>C1 – To what extent were the following aspects of teaching and learning stressed in your studies?</b> |                          |                          |                          |                          |  | Question ID<br>Q19 |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------|
|              | Not at all   |                          |                          |                          |                          | To a very high extent                                  |                    |
|              | 1  | 2                        | 3                        | 4                        | 5                        |  | Variable name      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Group work   | V19_1              |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | E-Learning   | V19_2              |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Lectures   | V19_3              |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Internships and practical training                     | V19_4              |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practical knowledge                                    | V19_5              |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Theories and paradigms                                 | V19_6              |
| 7            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Project and / or problem oriented learning             | V19_7              |
| 8            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Written work   | V19_8              |
| 9            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Oral presentations by students                         | V19_9              |
| 10           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Self-study activities                                  | V19_10             |
| 11           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teaching staff as main source of information           | V19_11             |
| 12           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Evaluation of courses by students                      | V19_12             |
| 13           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Choice of courses by students                          | V19_13             |
| 14           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Respectful communication between teachers and students | V19_14             |
| 15           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement of student motivation                      | V19_15             |
| 16           | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement of student self-learning abilities         | V19_16             |

Subject: Methods of teaching and learning; page number online; filter online.





## 8.6. Coding of open responses

The coding of open responses can be done without special software, though it needs the development of the code list.

### Development of response categories/code list

It is important to look for so-called head-categories, under which several individual responses can be subsumed. The meaning of such statements can be

presumed as the same even when different expressions are used. However, for the coding process, criteria for the similarity should be given in the codebook. This is mostly done by indicating examples.

For some variables it is recommended to use an existing standardised list of categories, for example job title/occupation (ISCO), economic sector (ISIC), region (NUTS) <sup>(9)</sup>.

### Box 14. ISCO: International standard classification of occupations

ISCO: *Welcome to the ISCO website*: <http://www.ilo.org/public/english/bureau/stat/isco/>

Latest version: ISCO-08 (approved in 2008); see <http://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm>

### Box 15. ISIC: International standard industrial classification of all economic activities (United Nations: New York, 2008)

The international standard industrial classification of all economic activities. ISIC (United Nations) is recommended to use for coding of the economic sector. A manual is available from the web. (United Nations, 2008) See also the statistical classification of economic activities in the European Community (NACE; latest version NACE Rev. 2, adopted in 2008) which is more detailed on lower levels of aggregation (European Commission, 2008).

See also the explanation of NACE from Eurostat: Glossary: [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Glossary:Statistical\\_classification\\_of\\_economic\\_activities\\_in\\_the\\_European\\_Community\\_%28NACE%29](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_%28NACE%29) [accessed 8.10.2014].

### Box 16. NUTS: Nomenclature of territorial units for statistics

NUTS is a system for dividing up the economic territory of the EU.

See the explanations of the NUTS classification on the Eurostat website: [http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts\\_nomenclature/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction)

<sup>8</sup> For more details on the use of standard classification see also Volume 1 (Chapter 4). The overview of international classifications of the United Nations at <http://unstats.un.org/unsd/class/>





### Text entry of all open responses

Responses to a particular question (in the following called 'texts') are copied out in such a way that it is possible to separate and sort the texts of the individual interviewees on different questions. Therefore, the number of the question and the case number (ID of the graduate) have to be noted as well as the actual text of the answer.

Sorting is very important since in the next step – the forming of categories of responses – it is necessary to obtain a complete overview of all answers concerning

one particular question; all other answers of the individual interviewees, as a rule, are not important:

- (a) it is useful to determine abbreviations before starting to enter the text (such as 'eng.' instead of 'engineer');
- (b) spelling mistakes may be corrected as only the meaning is important.

To sort the answers, a column for the case number and the question number should be captured together with the text.

Figure 22. Example for text data entry

| ID  | Question number | Code | Text     |
|-----|-----------------|------|----------|
| 001 | 12              |      | Response |
| 001 | 15              |      | Response |
| 001 | 16              |      | Response |
| 002 | 15              |      | Response |
| 002 | 16              |      | Response |
| 003 | 15              |      | Response |
| 003 | 16              |      | Response |

### Should all responses be coded?

If only a few interviewees answered open questions it is not worthwhile to plan a quantitative data analysis but the responses should still be captured as texts and, for the formulation of the examination report, they should be taken into consideration.

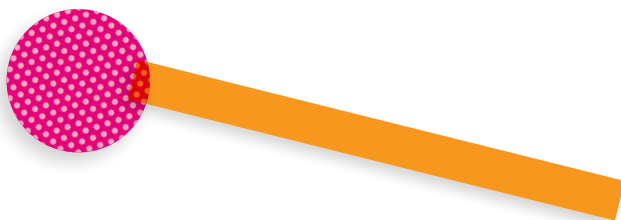
As a rough rule, if responses are received from more than 5% of the interviewees, they should be coded.

### 8.7. Numerical data entry

Data entry includes copying the codes from the questionnaire onto a suitable data carrier (which nowadays will probably be the hard disc of your computer).

Data capture can be affected by mistakes but contrary to 'normal' text, data mistakes are not easily found (see data control) as the sequence of the figures entered is different in each questionnaire. This is why





data capture professionals do not use a normal word-processing programme but a special data programme which, for example, checks plausibility while entering numerical values.

The error rate can be reduced considerably by capturing the data twice; first, all questionnaires are captured normally and afterwards all questionnaires are captured again (in the same sequence), but in the second stage only the correspondence with the first entry has to be detected and, if necessary, data have to be corrected. While it increases costs to do data capturing this way, in the following phase of data correction costs will be saved.

The control of the captured data (raw data and text of responses) has to be continued until the data reach a sufficient quality. However, it is neither meaningful nor feasible to strive for completely perfect data: the costs of removing every single mistake too are far too high. Data control has the function of excluding all systematic errors and of determining the degree of errors made accidentally.

If the data capturing is done by professionals, first a random selection of about 10-30 questionnaires should be captured and then this capturing should be checked very carefully. In practice, the captured data should be compared with the entry in the questionnaire: one person reads the captured codes (including 'blanks') and a second person checks these codes with the ones entered in the questionnaire.

All differences should be noted down, the different kinds of errors should be analysed and the proportion of errors calculated. The results of the data control should be reported back to the professionals. In general, an error level of 2-3% is still acceptable (excluding systematic errors). If the data capture has been done without many mistakes, it is possible to move on to data analysis.

First, however, it is necessary to define the data both for the later statistical analysis and also for the second phase of the data control.

### 8.8. Data definition with SPSS

To analyse the data with the help of SPSS requires a few instructions to inform the programme about the structure of the data (see appendix).

Instructions concerning the data definition (variable labels, value labels) are optional but improve the reading of the analysis prints.

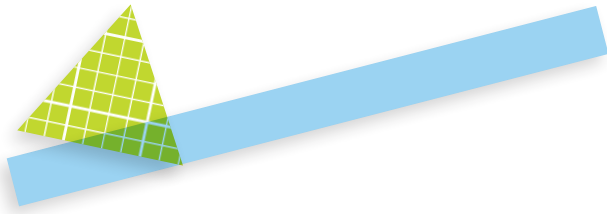
Style of instructions:

- nearly all instructions can be abbreviated. Mostly, the first three characters of an instruction are sufficient to enable SPSS to interpret them correctly; for example it is sufficient to write VAR LAB instead of writing variable labels. It is not necessary to write the abbreviations in capital letters, 'Var Lab' is correct, too.

End of instruction

- SPSS, recognises a point (.) as the end of an instruction. Instructions may extend over many lines (see Var Lab instructions).





### Box 17. SPSS syntax: labels and missing values

#### Variable labels

Description of the name of a variable.

120 characters at the most (most SPSS procedures only print the first 40 characters). With regard to the text, the variable labels correspond to the response items of the questionnaire; only if those are too long do they have to be shortened correspondingly.

**Variable label V81 'gender'**

#### Value labels

Description of the values of the variable.

60 characters at the most (most SPSS procedures only print the first 20 characters).

**Value labels V81**

**1 'male'**

**2 'female'**

**-9 'no answer'.**

#### Missing values

Some values of a variable are assigned the status 'missing'.

These values are not considered for statistical analysis of this variable.

**Missing value V81**

**(-9).**

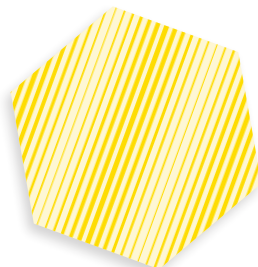
## 8.9. Missing values

By using the missing values instruction, the data are not changed but the data analysis programme receives notice for the data analysis not to take into account those cases showing values defined as missing.

The term 'missing values' is not particularly appropriate, as these values are not really missing in the data record. This is not allowed to happen as SPSS only processes files of a rectangular form.

### When should the values be defined as missing values?

It will often happen that individual questions are not answered by the interviewees without any cause being noticeable for this ('missing at random'). In some of the questions it will happen that certain groups of interviewees are excluded from reply (the item 'not applicable'). A systematic reason makes it impossible for these persons to answer the question; for example questions asking for motives for having changed employers can only be answered by those who actually





had done this. For data capturing you can explicitly provide a code for 'not applicable' (such as code -7).

If in data capture (actual) missing responses were explicitly coded it is necessary to inform the data analysis programme by the 'missing values' instruction. For example, the value '9' has to be understood as a missing value ('missing' = user-defined missing values).

If in data capture (actual) missing responses have not been explicitly coded ('blanks' in data record) at first it is useful to change (with the help of RECODE varname (SYSMIS=-9)) the coding of the missing values (SYSMIS = system-defined missing values; represented as point in print-outs), done by the SPSS-programme as standard. Then the data analysis programme can be informed by the 'missing value' instruction that, for example, the value '-9' has to be understood as missing value.

It is very important for the data analysis to deal carefully with the 'missing value' and it is necessary to decide for each individual question in what way missing responses are to be interpreted.

### 8.9.1. Proposal for missing values

We propose the following for missing values; they are all outside the normal value range.

- (a) -1 = 'question not asked'
- (b) -2 = 'drop-out'
- (c) -3 = 'outside the plausible value range'
- (d) -8 = 'filtered (not applicable)'
- (e) -9 = 'no answer'



## 8.10. Data modification

In data analysis it is often necessary to change the values of existing variables (for example to combine values, with the help of 'recode') or to create new variables (with the help of 'compute', 'count' or 'if'). See the SPSS syntax in annexes 4 and 5.

## 8.11. Simple data analysis: frequencies

The first step of the actual data analysis is to carry out simple frequency counts and aggregate statistics (such as arithmetic mean) of all variables. This is also very important for data control.

The advantage of the 'descriptives' procedure lies in the compact form of the print-outs as the statistical descriptives together with the name of the variable and the label are shown in one line.

In data control, however, the statistical descriptives have no interest value: the print-out of the 'frequencies' procedure is merely needed for checking each individual variable to ascertain whether its values seem to be plausible. For fault location, two cases have to be distinguished:

- (a) are the values within a permissible field of values?  
If, for example, the possible responses lie only between 1 and 5 in the field of values, the value 6 is inadmissible; this is a 'wild code' that proves that errors have been made in data capture;
- (b) are the values plausible when considering further statements of the same interviewee? If an interviewee indicates, for example, that he has not yet found employment he should not give any further statements concerning the methods of finding employment.





Frequency counts inform about whether there are any errors within the data. To determine the error, and possibly correct it, it is necessary to find out the case in which the error occurs.

The procedure 'list' permits examination of the values of variables in individual cases.

### 8.12. Data correction with syntax

To be able to correct the data, it is necessary to return to the questionnaires.

The correction of data can:

- (a) be done directly in the raw data (not recommended);
- (b) be implemented in the system file with the help of 'data entry' (the raw data remain faulty, but here, too, it is important to work very carefully not to produce any other errors);
- (c) also be affected by using 'if' instructions in the system file (the raw data remain faulty but the correction of the errors stays transparent and can be checked any time).

Use SPSS syntax for data corrections.  
This is the only way to document this important change in data.

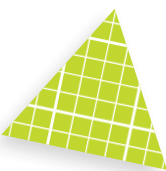
### 8.13. Further statistical analysis

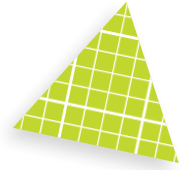
The simple frequency countings ('frequencies'), statistical descriptives ('descriptives') and the table volume containing a breakdown of the results for important survey groups (such as gender, field of study) provide answers to most of survey questions.

Volume 1 (Chapter 4) provides some suggestion on indicators of skills demand, supply and mismatch which can be computed using different data sources including tracer studies. In most cases they build on simple statistics such as frequencies, crosstabs and descriptives.

For some of the questions the data analysis strategies shown are not really satisfactory:

- (a) for individual questions, for example, it is interesting to analyse responses by further differentiating characteristics (gender, study performances, origin, professional education);
- (b) it may be interesting, for example, to look at the responses of some questions where specific characteristics were not actually asked for but resulted from the combination of individual characteristics;
- (c) if differences were noticed in main questions, for example subject area, year of graduation and field of employment, it is important to enquire about those that are more crucial. This is not possible by only comparing percentage values or means, but needs special procedures. As connections may also exist between the subject area and the field of employment, multivariate analysis strategies are advisable (e.g. SPSS procedures Anova or Regression);
- (d) it is not an analysis of effectiveness simply to describe the differences between groups or the relations between variables. To find out to what extent the further professional career of graduates is influenced by their studies and by the study conditions; more in-depth analysis is necessary, the description of which would be beyond the scope of this guide.





## Chapter 9. Presentation of results

### 9.1. Overview

The possibilities of practical use of the results of the tracer studies depend on the reports style. The more results are available for the public, the more the tracer study can be useful for the different stakeholders:

- (a) potential students and their parents,
- (b) current students,
- (c) teachers,
- (d) managers of the education institutions,
- (e) fresh graduates,
- (f) employers,
- (g) government,
- (h) researchers.

Decisions on practical consequences of the results should be based on a thorough interpretation of the findings, with consideration of the quality of the data as well as other possible interpretations. The data analysis can help to test some of the possible interpretations.

### 9.2. Key challenges of interpretation

Institutional tracer studies usually aim to get empirical data which can be used for practical improvements within the institution. However, practical lessons can only be drawn from the results of a study if the data are of sufficient quality. Without published documentation of the methodological quality of the study, which allows critical discussion, the proposed improvements can always be rejected with methodological arguments.

#### 9.2.1. High quality of the survey is needed

Many tracer studies in the TVET as well as in the higher education sector are low quality and their usefulness is also low. It is not possible to reach meaningful conclusions on improvements to study/training if the empirical base ('the empirical evidence') is weak.

Key problems of data quality are:

- (a) reliability and validity of the data are not tested;
- (b) biased sample;
- (c) representativity not tested;
- (d) low response rate;
- (e) low address quality/addresses are not valid.

Reports from tracer studies seldom contain sufficient information about key methodological issues. The following methodological issues should be always reported:

- (a) sampling;
- (b) address quality;
- (c) number and kind of contacts to graduates;
- (d) response behaviour and representativity;
- (e) data quality, kind of data manipulation and analysis.

If this information is not provided, the quality of the data remains doubtful.

#### 9.2.2. Sometimes only simplistic information is provided

Sometimes tracer studies provide only simplistic information. They use a very small range of 'objective' data on:

- (a) employment (employment status and income);
- (b) TVET education (type of institution, level of degree, field of study and individual institution).

Missing are key issues relevant for quality management:

- (a) generation and utilisation of knowledge;
- (b) the extent and the dimension of professional impact of TVET/higher education education/training<sup>10</sup>.

<sup>10</sup> See Volume 1 (Chapter 4) for suggestions of indicators on skills supply, demand and mismatch which can build on various data sources including tracer studies. These indicators may be used to a limited extent by an individual institution which conducts a tracer study but bring significant added value if comparable results are available on national or regional level. Information from other data sources should help in interpretation of the results of a tracer study.



### 9.2.3. Missing or wrong interpretation of findings

Interpretation of findings is often missing in reports about tracer studies. Reports are often just a verbalisation of selected descriptive findings provided in tables and charts.

Sometimes even such simple text is misleading because only selected findings are presented, as in this example:

'The diploma of vocational education was important for employers during employment of 39.7% of graduates. In case of employment of 18.4% graduates the diploma was 'the most important' factor, and for 21.3% of graduates the diploma was of secondary importance for employers at the moment of employment'. The authors did not report another answer of the graduates: 55% of the graduates reported that their vocational education was of 'no importance', a finding available only by checking the related chart.

Sometimes the interpretation of findings is completely wrong because the report writers do not have the necessary background knowledge to make meaningful interpretations. The following example is taken from a published report about a tracer study with graduates from higher education in Uganda.

'Graduates were asked to characterise the relationship between their field of study and their occupations at the time of interview. Table 58 gives a summary of characterisation by programme. The figures in the table give a rating by the graduates on the content of the programmes offered by the institutions.

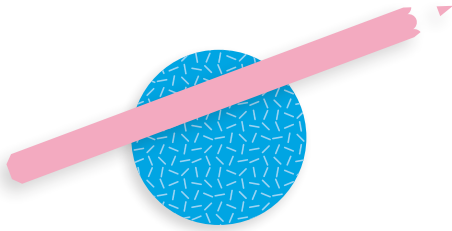
Table shows that 46% of the graduates believed that their field of study is the only possible/by far best field for their employment, while 27% thought that some other fields could prepare them well for their employment. 5% believed that another field would have been more appropriate, and 2% indicated that their field of study was irrelevant to their employment.

Eighty five percent (85%) of doctors and diploma in animal husbandry holders, 83% of lawyers and 72% of engineers, characterised their studies as the only and best field for their employment compared to only 10% of graduates of development studies, social sciences and arts. These findings confirm the argument that the general degrees do not provide adequate preparation for graduates while the specialised degrees prepare their graduates for the field of work better.' (Makerere Institute of Social Research, 2006, p. 31).

**Table 58. Characterisation of relationship between field of study and occupation by programme**

| Program                           | Characterization of Relationship                    |       |  |    |   |    |                                       |    |  |    |        |   | Total |     |     |
|-----------------------------------|---|-------|--|----|---|----|---------------------------------------|----|--|----|--------|---|-------|-----|-----|
|                                   | Field of study only possible/ by far the best field |       | Some other fields could prepare for the area of work as well |    | Another field would have been more useful |    | Field study does not matter very much |    | Higher education studies not related to area of work |    | Others |   |       |     |     |
|                                   | #   | %     | #  | %  | #   | %  | #                                     | %  | #  | %  | #      | % |       |     |     |
| Degree in Human Medicine          | 44  | 84.60 | 7  | 14 | 1   | 2  |                                       |    |  |    |        |   | 52    | 100 |     |
| Degree in Law                     | 40  | 83.30 | 6  | 13 |   |    | 1                                     | 2  |  |    |        | 1 | 2     | 48  | 100 |
| Degree in Social Sciences         | 3   | 10.00 | 20   | 67 | 3   | 10 | 4                                     | 13 |  |    |        |   |       | 30  | 100 |
| Degree in Agriculture             | 12  | 38.70 | 14   | 45 | 3   | 10 | 2                                     | 7  |  |    |        |   |       | 31  | 100 |
| Degree in Architecture            | 5   | 50.00 | 3  | 30 | 1   | 10 |                                       |    | 1  | 10 |        |   |       | 10  | 100 |
| Degree in Business Administration | 20  | 47.60 | 11   | 26 | 1   | 2  | 7                                     | 17 | 3  | 7  |        |   |       | 42  | 100 |

Source: Makerere Institute of Social Research, 2006, p. 32.



Their interpretation 'that the general degrees do not provide adequate preparation for graduates while the specialised degrees prepare their graduates for the field of work better' seems to have the underlying assumption that only the first answer 'Field of study is the only possible/by far the best field' (p. 80) indicates an 'adequate preparation' for the work tasks of graduates. This position ignores the known fact that, in higher education, only a few groups of graduates have closed labour markets where only their specific field of study allows them to enter a specific profession. In most countries of the world this is only the case for graduates from medicine and law. These classical professions have very restrictive regulations which usually do not allow graduates from other fields to enter their profession. Other fields of study do not use such an approach and it is therefore not meaningful to describe this situation as 'not adequate preparation'. Also the distinction between general degrees and specialised degrees is misleading. Medicine and law are usually not classified as specialised degrees but as professional fields as well as engineering. More important in higher education is the distinction between professional and academic orientation of study programmes.

The authors also neglect the fact that the answer 'some other fields could prepare for the area of work as well' do not indicate a mismatch of skills and job requirements because it only says something about the flexibility of job demands regarding graduates with different fields of study.

### 9.3. Methods report

An important part of the report of the results is a method report. The reader should be able to understand the processes and the result of the data collection activities as well as the objectives and the questionnaire of the tracer study.

Every tracer study should have a methods report

The following 15 aspects should be a guide for a method report, which could be a separate report or a part of the main report of the results. All these topics are covered in the guide:

- (a) background of the tracer study;
- (b) description of the objectives (Chapter 2);
- (c) development of the research instruments/questionnaires (sources?) (see Chapters 5 and 6);
- (d) test of the questionnaire (Chapter 5);
- (e) target population (Chapter 2);
- (f) quality and quantity of addresses (Chapter 6);
- (g) update procedures for addresses (Chapters 6 and 7);
- (h) timing of the survey, reminder actions (Chapters 6 and 7);
- (i) response statistics (Section 7.4).
- (j) check of representativity (comparison with existing statistics);
- (k) data entry and coding procedures (Chapter 8);
- (l) kind of plausibility checks and data cleaning (Chapters 7 and 8);
- (m) data analysis procedures (software and procedures used) (Chapter 8);
- (n) critical reflection about the quality of the data (reliability and validity).

### 9.4. Report on results

It is not only the results that are decisive for the effectiveness of a survey but also the way they are presented. Many tracer studies implemented at great cost did not achieve great effectiveness because too little attention was paid to reporting.

The publication of the report is strongly recommended





It is more costly to produce a survey report with the aim of publishing it for a wider readership than is planned for an internal report but this extra work is worthwhile.

### Report for participating graduates

A short report should be provided for the graduates who participated in the tracer study. This could be also an incentive to participate in the survey.

Write a short report for the graduates who participated in the tracer study.

### Reports, as incentives to participate

Such reports (perhaps made available on the web site of the tracer study), could also motivate actual students to participate when they are graduates. Published reports demonstrate the use of the results by the institution and could be a key aspect in establishing a culture of self-evaluation and self-assessment.

### Recommendations for reporting

It is not possible to standardise the drafting of the survey report. A few general recommendations are offered below.

### Information about the institution and the study programme

Consider that some of the readers (the public, employers, later students and their parents) might have little or no knowledge of the educational programme of the TVET/higher education institution. Therefore, avoid using abbreviations which may not be familiar to everybody.

Avoid abbreviations in the report

### Introduction to the subjects

Every chapter in the report needs a short introduction to the subject/the questions investigated:

- (a) what you want to know;
- (b) why you want to know it: explain the practical purpose;
- (c) the theoretical context.

### Presentation of the selected findings:

- (a) the results;
- (b) most of the time, the 'result' is a statistical descriptive; we especially recommend percentages, as they can best be understood by the readers. Arithmetic means only are comprehensible when the scale is explained;
- (c) if, for example, it is reported that X% of the graduates indicate that their professional position is appropriate to their studies, this has come from the SPSS-jobs, mainly the table volume.

### Use precise terms

Indefinite terms such as many, several, few, some (when referring to graduates) are best avoided if the exact information is not presented in form of statistical descriptives at the same time. Using 'many graduates (82%) ...' is acceptable as the term 'many' is clarified in the parenthesis.

### Present complete results in tables and/or charts

Main findings should also be presented in the form of a table or a graph (next to the information in the text). Most tables and graphs contain much more information than can be given in the text and by studying them the reader is able to check the presentation of the results as well as to infer additional details about the question and answers. Tables and graphs should always contain the full information about



the formulation of the question and the answers include the scale they are based on.

### First present overall results and then group results

For the reader it is much easier to understand the presentation if it first gives the results for the total population and – where interesting – then differentiates the findings.

### Number of decimal points

Usually it is not recommended to present percentages with decimal points (wrong: 11.3%; correct: 11%).

Tracer study data usually are not of sufficient quality to allow conclusions based on the number on the right side of the decimal point. These numbers are meaningless because that precision of measuring is not reached.

In case of the arithmetic mean or median one decimal point is sufficient.

Do not present percentages with decimal points.

## 9.5. Tables report

A very useful tool for the presentation of the results of a tracer study is a complete table report. In such a report all answers to all questions are included with a breakdown of groups of main interested.

In Annex 3 a complete table report is provided which could be used as an example.

The table report comprises all questions of the questionnaire in the original sequence.

With such a table report it is easy to select interesting findings (tables) and write comments and interpretations. The tables could also be copied to Excel for creating charts.

Such table reports should be produced for the key 'break variables' (such as study programme, gender, economic sector) related to the objectives of the tracer study.

Proposals for break variables include:

- (a) field of study or study programme;
- (b) kind of degree/qualification;
- (c) combination of field of study and gender;
- (d) employment status;
- (e) economic sector.

## 9.6. Interpretation of results and practical conclusions

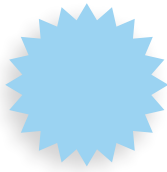
Practical conclusions from the results of the tracer study can only be drawn if in-depth interpretation of the results is undertaken.

Interpretation of results requires:

- (a) critical reflection on the possibility of biased results;
- (b) comparison of results with other studies;
- (c) comparison of results from similar question in the tracer study;
- (d) consideration of information about the education context, not gained through the study (such as information about the institution and the study programme/training course);
- (e) consideration of information about the labour market, not gained through the study (such as information about unemployment, economic cycle, economic structure in a region);

The task of interpretation is therefore always combined with data analysis.





### **Comparability**

An important aspect of the interpretation of findings is comparability with findings from other tracer studies at the same institution which were done earlier, or with tracer studies from other institutions.

Within one institution, the comparison between study programmes is most important. All results of the study must be presented at the level of study programmes/ training courses if conclusions for this level are the objective. Overall results for the whole institution are less interesting in this context but relationships within the collected data are relevant and should be checked and compared systematically.

### **Appropriate statistical methods**

The use of the appropriate statistical methods is also crucial in interpreting results and before conclusions for policy decisions can be drawn. The results are always produced by a selected statistical method: there is no simple direct way from the data to results.

For example, to reduce the statistical analysis in a way that only simple frequencies are presented for the whole population (such as all graduates from one institution) is misleading because there can be big differences between aspects such as study programmes/training courses and gender. To what extent these differences exist and how they explain the 'employment outcomes' must be tested with appropriate statistical methods such as cross tabulation, analysis of variance, and regression analysis.

### **Statistical significance and importance of findings**

Interpretation of results should usually be based on 'statistical significance', but this is not identical to 'importance'. Statistical significance helps to avoid an over-interpretation of findings which might have occurred by chance. This is especially important if the number of cases is small.

### **Biased results**

In interpreting the findings it should always be discussed whether the results might be biased, that they might be influenced in a certain direction and not only by a random error. To detect biased results a method report should contain precise and full information about the survey procedures (Chapter 6 and 7).

Since it is almost impossible to correct biased results, attempts to ensure that the sample of participating graduates is representative are crucial for the whole study. If a bias cannot be avoided this has to be made clear in the report as a key input to meaningful discussion of the results.

### **Selection bias**

If the sample of graduates participating in the tracer study is not representative of the total population, the result may be misleading. For example, contacting only graduates who are members of the Alumni Association of the institution might the sample is biased towards successful ones. Bias could also result from only having addresses of graduates from the region of the capital of the country.

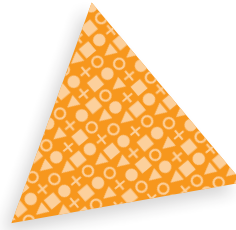
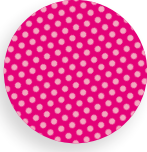
### **Confounding**

If conclusions are to be drawn from the results it is necessary to discuss carefully all possible factors which might contribute.

For example, as a result from a tracer study a high level of 'mismatch' of skills acquired during study/training and work tasks was reported. What does it mean? Can we draw the conclusion that we should change the curriculum or that we should close the study programme/training?

Such conclusions ignore many factors besides the education/training gained that might explain the result. Some of them can be addressed directly in the questionnaire:





- (a) the current job is only a temporary stepping stone;
- (b) higher salary in the current job;
- (c) job offers more security;
- (d) interests have changed;
- (e) current job allows a flexible time schedule;
- (f) current job allows to work in a favoured geographical place;
- (g) current job allows to take into consideration the interests of my family/children;
- (h) other reasons.

See the sample questionnaire in the Annex 2 Question H5: If your job is not close related to your course of study, why did you choose this job? Multiple answers possible.

Individual motivation, vertical match and the labour market at a given time and in a certain region are all relevant factors which must be considered before conclusions can be drawn.

Interpretations aim at explaining findings or at least classifying them within an explanation frame. Often these interpretations begin with the following sentence: 'It has to be taken into consideration that...'. In scientific surveys which are used to test specific hypotheses, the theory that is to be examined already represents the explanation and interpretation frame. In contrast, graduate surveys are seldom implemented to test comparable individual hypotheses; instead they supply a multitude of information which is useful for different kinds of objectives.

Therefore, while presenting the results and their interpretation it is important to develop an interpretation frame which classifies individual findings.

This is possible by choosing relative comparison standards for the interpretation. It is interesting, for example, to compare the results of Question C2 ('How would you rate the study conditions and provisions you experienced at the TVET/higher education institution?'):

- (a) by subject area;
- (b) by gender within subject area;
- (c) by employment status.

#### **Change over time**

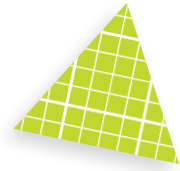
If the tracer studies are done every year, comparison with the results from different years will lead to an interesting option for interpretation. Where measures to improve the study conditions and provisions (such as the curriculum) have been implemented, regular tracer studies can help see if these improvements have had effects on the competencies of graduates and their employability. The results of earlier tracer studies can then be used as a baseline for comparison, though other context factors (e.g. labour market) must be also considered.

### **9.7. Tracer studies in international development cooperation projects**

In many international development projects in TVET and higher education, with agencies such as the World Bank, Asian Development Bank, Deutsche Gesellschaft für international Zusammenarbeit (GIZ), and the Japan International Cooperation Agency (JICA), the results of tracer studies are important in monitoring and evaluation. The following GIZ guideline outlines the concept:

'Monitoring and measuring results are imperatives for practitioners in international development cooperation,





since they are the only means to provide evidence of the results and effectiveness of development work in partner countries. [...] Planning, monitoring and evaluation are used to reflect the results of development measures and programmes. Results-based monitoring in particular is a fundamental part of project management. By continuously checking the effects of an intervention it is possible to identify positive and negative developments early enough to address them. It makes clear which measures are working and which are not achieving results or not the desired results. Monitoring is also the basis for sound accountability.' (Meyer and Thomas, 2011, p. 6).

More specific are the relevance and methodology of tracer studies described in the following GIZ tracer study guideline:

'Tracer studies can be an effective tool for following-up the situation of graduates from any educational institution (professional secondary school, college, university). They allow collecting information on labour market success of graduates, on the effectiveness, adequateness, quality of the training, and on many other aspects which makes them relevant for the steering of a market-oriented educational and vocational training system as well as the on-going TVET reform process. [...] By means of the collected information, tracer studies not only allow a comparison of training institutions with respect to their training effectiveness, but also an adjustment of training curricula to market needs. Furthermore they can give direct feedback to the training institutions on the quality of training by means of subjective evaluation but also by means of hard facts, such as the number of students that found a job in a given period of time.' (Ehlert and Kluve, 2011, p. 3)

In addition to Volume 1 of this guide, many agencies have produced guidelines which describes the use of tracer studies:

(a) **European Training Foundation**

IAG-TVET (2012).

(b) **International Labour Organization**

Billorou et al. (2011); ILO-IPEC (2011); Iburguen and Abdul Cader (2005).

(c) **Deutsche Gesellschaft für Internationale Zusammenarbeit**

Ehlert and Kluve (2011); Kluve et al. (2011).

(d) **Helvetas**

Macchi et al. (2009); Helvetas (2009)

(e) **World Bank**

Psacharopoulos and Hinchcliffe (1983).

(f) **Unesco**

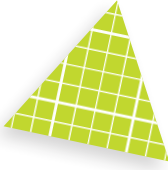
Lamour (1996).

(g) **Use at system level: TVET/higher education policy**

In many countries tracer studies are used to inform decision-makers at different system levels (country, region, institution) about the job prospects of graduates and their evaluation of the study/training programme. To get regular such information many countries (including Australia, France, Germany, Hungary, Indonesia, Italy, Malaysia, the Netherlands, Norway, Switzerland, the UK and the US) carried out tracer studies.

Mostly the results are published and access is possible for a broad audience. The results are also used for national reports on the development of the education system.





#### (h) Example of a GIZ TVET project in Indonesia

Project title: 'Sustainable economic development through technical and vocational education and training (SED-TVET)'

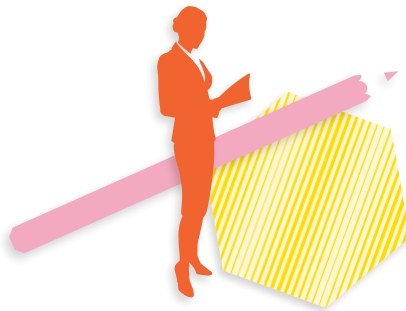
'To make vocational education more relevant for industry needs, both education providers and private businesses have to systematically exchange information on the development of local labour markets including future human resource and competency demands. SED-TVET supports local actors to develop and implement instruments for information exchange and collaboration, such as graduate tracer studies. Furthermore, SED-TVET supports partner institutes to use this information to adapt curricula and offer career counselling and guidance services for the better transition into employment of young job seekers.' (GIZ and KFW, 2013).

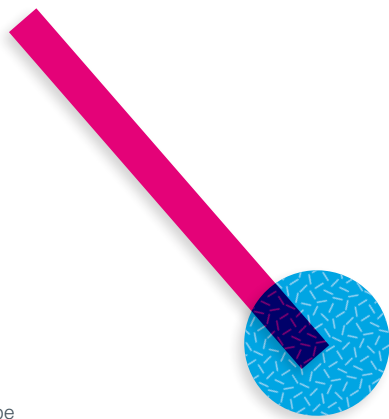
Since the employability of graduates might depend on many factors which are not shaped by the study programme, the practical consequences of the results of tracer studies are often not self-evident. The results – if carefully analysed – might give some hints of strengths and weaknesses of the study programme, but education decision-makers cannot simply derive their change strategies from the findings.

Also, the retrospective evaluation of the study programme by the graduates might be biased, for example, according to different experiences on the labour market. For instance, if a cohort of graduates suddenly faces severe problems in securing appropriate employment due to an economic crisis, their retrospective ratings of the study conditions and study provisions might be negatively influenced by their experiences of the bad labour market rather than by the study conditions and provisions.

### 9.8. Misinterpretation of findings

Findings on the professional success of graduates cannot be taken as a direct result of the study/training, so conclusions for improvements cannot be drawn from the findings without the discussion of relevant contextual factors. For instance, low graduate employment of can be the result of the motivation of many graduates to continue to study to reach a higher level of education or to change the area of professional training. It is generally misleading to take the results of tracer studies as simple indicators of performance which could be related direct to policy actions. Many indicators of professional success (such as employment status, income, vertical and horizontal links to study/training, job satisfaction) must be considered and especially the labour market conditions in different sectors and regions.





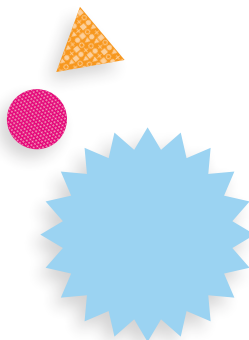
## 9.9. Dissemination activities

The results of institutional tracer studies should be distributed to all stakeholders identified in developing the objectives of the study:

- (a) mass media;
- (b) students and their parents;
- (c) graduates;
- (d) staff of the education institution;
- (e) decision-makers at different system levels (country, region institution, department);
- (f) student counsellors;
- (g) career advisors;
- (h) employers;
- (i) education researchers.

The University of Indonesia developed the following additional dissemination activities:

- (a) alumni:
  - (i) during their graduation ceremony;
  - (ii) inserting in rector speech;
  - (iii) inserting in media promotion (video);
- (b) publication
  - (i) alumni website;
  - (ii) faculty website;
- (c) students:
  - (i) learning orientation programme;
  - (ii) student profession seminars.





## Chapter 10. Self-evaluation of study quality

### 10.1. Overview

This chapter offers an easy way to check the quality of the methodology of a tracer study. It is organised as a questionnaire and can be used in every phase of the study to evaluate what is planned to be done or what was done.

The following criteria for tracer study quality are taken from the different steps in conducting a tracer study described in this guide:

(a) objectives of the study;

(b) address database;

(c) quality of the questionnaire;

(d) survey procedures;

(e) data cleaning;

(f) data analysis;

(g) quality of reports;

(h) dissemination activities.

### 10.2. Objectives of the tracer study

| NU076/<br>OR | 1 – To what extent do you agree with the following sentences regarding the objectives of the tracer study? |                          |                          |                          |                          | QS1   |      |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|---|------|
|              | Not at all   |                          |                          |                          |                          |   |      |
|              | To a very high extent  |                          |                          |                          |                          |   |      |
|              | 1  | 2                        | 3                        | 4                        | 5                        |   |      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The objectives outlined in the report are very clear                                | V1_1 |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The selection of the target population is related to the objectives                 | V1_2 |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The objectives outlined in the report are explicitly related to research literature | V1_3 |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The objectives outlined in the report are very detailed                             | V1_4 |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The conclusions of the tracer study are related to the objectives                   | V1_5 |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | In general: the objectives of the tracer study are of high quality                  | V1_6 |

Maximum: 30 point

| Very bad |   |   |   |   |   | Bad |   |   |    |    |    | Good |    |    |    |    |    | Very good |    |    |    |    |    |    |    |    |    |    |    |
|----------|---|---|---|---|---|-----|---|---|----|----|----|------|----|----|----|----|----|-----------|----|----|----|----|----|----|----|----|----|----|----|
| 1        | 2 | 3 | 4 | 5 | 6 | 7   | 8 | 9 | 10 | 11 | 12 | 13   | 14 | 15 | 16 | 17 | 18 | 19        | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|          |   |   |   |   |   |     |   |   |    |    |    |      |    |    |    |    |    |           |    |    |    |    |    |    |    |    |    |    |    |
|          |   |   |   |   |   |     |   |   |    |    |    |      |    |    |    |    |    |           |    |    |    |    |    |    |    |    |    |    |    |





### 10.3. Address database

|              |  |                          |                          |                          |                          |  |      |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--|------|
| NU076/<br>OR | <b>2 – How do you rate the quality of the tracer study address database?</b> |                          |                          |                          |                          |  | QS2  |
|              | Not at all   |                          |                          |                          |                          | To a very high extent  |      |
|              | 1  | 2                        | 3                        | 4                        | 5                        |  |      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Completeness of addresses regarding the target population                            | V2_1 |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information regarding the update status of the addresses                             | V2_2 |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information about all update activities  | V2_3 |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information about the process of the field phase                                     | V2_4 |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information about the target population (e.g. field of study, qualification, gender) | V2_5 |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The address database in general  | V2_6 |

Maximum: 30 point

| Very bad |  |  | Bad |   |   |   |   | Good |   |   |   |   |   |   |   | Very good |   |   |   |   |   |   |   |
|----------|--|--|-----|---|---|---|---|------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|
|          |  |  | 0   | 1 | 2 | 3 | 4 | 5    | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3         | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |     |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |

### 10.4. Quality of the questionnaire

|              |  |                          |                          |                          |                          |  |      |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--|------|
| NU076/<br>OR | <b>3 – How do you rate the following aspects of the tracer study questionnaire? If not applicable/non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |  | QS3  |
|              | Not at all   |                          |                          |                          |                          | To a very high extent  |      |
|              | 1  | 2                        | 3                        | 4                        | 5                        |  |      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The test of the questionnaire                                      | V3_1 |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Documentation of the sources of the questions in the questionnaire | V3_2 |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The formatting of the questionnaire                                | V3_3 |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The justification of the questions                                 | V3_4 |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The length of the questionnaire                                    | V3_5 |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The quality of the questionnaire in general                        | V3_6 |

Maximum: 30 point

| Very bad |  |  | Bad |   |   |   |   | Good |   |   |   |   |   |   |   | Very good |   |   |   |   |   |   |   |
|----------|--|--|-----|---|---|---|---|------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|
|          |  |  | 0   | 1 | 2 | 3 | 4 | 5    | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3         | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |     |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |



## 10.5. Survey procedures

|              |   |                          |                          |                          |                          |   |      |
|--------------|---|--------------------------|--------------------------|--------------------------|--------------------------|---|------|
| NU076/<br>OR | <b>4 – How do you rate the survey tracer study procedures?<br/>If not applicable/non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |   | QS4  |
|              | Not at all  |                          |                          |                          |                          | To a very high extent                                   |      |
|              | 1   | 2                        | 3                        | 4                        | 5                        |   |      |
| 1            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sampling (selection of target population of the survey) | V4_1 |
| 2            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Response rate achieved                                  | V4_2 |
| 3            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Response rate calculation                               | V4_3 |
| 4            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Documentation of activities to contact the graduates    | V4_4 |
| 5            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Test of representativity of participating graduates     | V4_5 |
| 6            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Survey procedures in general                            | V4_6 |

Maximum: 30 point

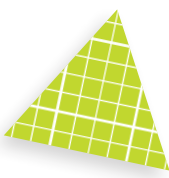
| Very bad |  |  |  |  | Bad |   |   |   | Good |   |   |   |   |   |   |   | Very good |   |   |   |   |   |   |   |   |   |
|----------|--|--|--|--|-----|---|---|---|------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|
|          |  |  |  |  |     | 0 | 1 | 2 | 3    | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |  |  |     |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |

## 10.6. Data cleaning

|              |   |                          |                          |                          |                          |                                       |      |
|--------------|---|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------|------|
| NU076/<br>OR | <b>5 – How do you rate the tracer study data cleaning procedures? If not applicable/<br/>non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |                                       | QS5  |
|              | Not at all  |                          |                          |                          |                          | To a very high extent                 |      |
|              | 1   | 2                        | 3                        | 4                        | 5                        |                                       |      |
| 1            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Coding of open answers                | V5_1 |
| 2            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Coding of half-open answers ('other') | V5_2 |
| 3            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Documentation of data (codebook)      | V5_3 |
| 4            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Plausibility checks                   | V5_4 |
| 5            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Correction of the data errors         | V5_5 |
| 6            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Data cleaning in general              | V5_6 |

Maximum: 30 point

| Very bad |  |  |  |  | Bad |   |   |   | Good |   |   |   |   |   |   |   | Very good |   |   |   |   |   |   |   |   |   |
|----------|--|--|--|--|-----|---|---|---|------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|
|          |  |  |  |  |     | 0 | 1 | 2 | 3    | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |  |  |     |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |   |   |



### 10.7. Data analysis

|              |  |                          |                          |                          |                          |   |      |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|---|------|
| NU076/<br>OR | <b>6 – How do you rate the data analysis of the data of the tracer study? If not applicable/non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |   | QS6  |
|              | Not at all   |                          |                          |                          |                          | To a very high extent   |      |
|              | 1  | 2                        | 3                        | 4                        | 5                        |   |      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Descriptive analysis of the whole population                              | V6_1 |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Descriptive comparison of groups (tables)                                 | V6_2 |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Statistical analysis of differences between groups (analysis of variance) | V6_3 |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Multivariate analysis (such as regression analysis)                       | V6_4 |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Causal analysis with LISREL, AMOS or other software                       | V6_5 |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The data analysis in general  | V6_6 |

Maximum: 30 point

| Very bad |  |  |  |  | Bad |  |   |   |   | Good |   |   |   |   | Very good |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|--|--|--|--|-----|--|---|---|---|------|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|
|          |  |  |  |  |     |  | 0 | 1 | 2 | 3    | 4 | 5 | 6 | 7 | 8         | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |  |  |     |  |   |   |   |      |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |   |

### 10.8. Quality of reports

|              |  |                          |                          |                          |                          |   |      |
|--------------|--|--------------------------|--------------------------|--------------------------|--------------------------|---|------|
| NU076/<br>OR | <b>7 – How do you rate the reports of the tracer study? If not applicable/non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |   | QS7  |
|              | Not at all   |                          |                          |                          |                          | To a very high extent                       |      |
|              | 1  | 2                        | 3                        | 4                        | 5                        |   |      |
| 1            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tables report                               | V7_2 |
| 2            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Presentations (e.g. Powerpoint)             | V7_3 |
| 3            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Scientific reports/publications             | V7_4 |
| 4            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Recommendations related to the data/results | V7_5 |
| 5            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The reports in general                      | V7_5 |
| 6            | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tables report                               | V7_2 |

Maximum: 30 point

| Very bad |  |  |  |  | Bad |  |   |   |   | Good |   |   |   |   | Very good |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|--|--|--|--|-----|--|---|---|---|------|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|
|          |  |  |  |  |     |  | 0 | 1 | 2 | 3    | 4 | 5 | 6 | 7 | 8         | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|          |  |  |  |  |     |  |   |   |   |      |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |   |

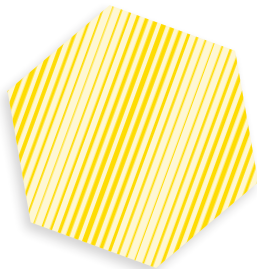


### 10.9. Dissemination activities

|              |   |                          |                          |                          |                          |   |      |
|--------------|---|--------------------------|--------------------------|--------------------------|--------------------------|---|------|
| NU076/<br>OR | <b>8 – How do you rate the dissemination activities? If not applicable/non-existent use the value 1 = very bad.</b> |                          |                          |                          |                          |   | QS8  |
|              | Not at all  |                          |                          |                          |                          | To a very high extent   |      |
|              | 1   | 2                        | 3                        | 4                        | 5                        |   |      |
| 1            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information/reports to the management of the institution  | V8_1 |
| 2            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Information/reports to staff of the TVET/ higher education institution  | V8_2 |
| 3            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mass media information  | V8_3 |
| 4            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Use of the results for improving the curriculum   | V8_4 |
| 5            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Use of the results for improving the study conditions and provisions at the TVET/higher education institution | V8_5 |
| 6            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The dissemination activities in general   | V8_6 |

Maximum: 30 point

| Very bad |  |  |  |  | Bad |   |   |   |   | Good |   |   |   |   | Very good |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |
|----------|--|--|--|--|-----|---|---|---|---|------|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|
|          |  |  |  |  | 0   | 1 | 2 | 3 | 4 | 5    | 6 | 7 | 8 | 9 | 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |  |  |  |  |  |  |  |  |  |  |
|          |  |  |  |  |     |   |   |   |   |      |   |   |   |   |           |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |

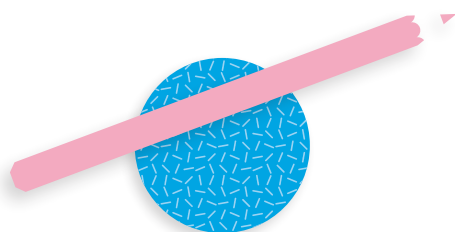


# ACRONYMS

|                 |  |
|-----------------|--|
| <b>Cedefop</b>  | European Centre for the Development of Vocational Training   |
| <b>Céreq</b>    | Centre d'études et de recherches sur les qualifications [centre for studies and research on qualifications] (France)   |
| <b>Cheers</b>   | Career after higher education: a European research study   |
| <b>CRRC</b>     | Caucasus Research Resource Centre (Armenia)  |
| <b>ETF</b>      | European Training Foundation   |
| <b>G20</b>      | Group of twenty  |
| <b>GIZ</b>      | German agency for international cooperation<br>[Deutsche Gesellschaft für Internationale Zusammenarbeit]   |
| <b>GTZ</b>      | German agency for technical cooperation<br>[Deutsche Gesellschaft für Technische Zusammenarbeit]   |
| <b>Hegesco</b>  | higher education as a generator of strategic competencies  |
| <b>HIS</b>      | higher education information system (Germany)  |
| <b>IAG-TVET</b> | Inter-agency working group on technical and vocational education and training indicators   |
| <b>ILO</b>      | International Labour Organization  |
| <b>IPEC</b>     | International programme on the elimination of child labour   |
| <b>ISCO</b>     | International standard classification of occupations   |
| <b>ISCO-08</b>  | International standard classification of occupations, approved in 2008   |
| <b>ISIC</b>     | International standard industrial classification of all economic activities  |
| <b>JICA</b>     | Japan International Cooperation Agency   |
| <b>KOAB</b>     | <i>Das Kooperationsprojekt Absolventenstudien</i> [The graduate survey cooperation project] (Germany)  |
| <b>LMIS</b>     | Labour market information system   |
| <b>NACE</b>     | Nomenclature statistique des activités économiques dans la Communauté européenne [Statistical classification of economic activities in the European Community] |
| <b>NUTS</b>     | Nomenclature of territorial units for statistics   |
| <b>ROA</b>      | Research Centre for Education and the Labour Market (The Netherlands)  |
| <b>SED-TVET</b> | Sustainable economic development through technical and vocational education and training   |
| <b>SPSS</b>     | statistical package for the social sciences  |
| <b>SWTS</b>     | School-to-work transition survey   |
| <b>TESDA</b>    | Technical Education and Skills Development Authority (Philippines)   |
| <b>TVET</b>     | technical and vocational education and training  |
| <b>Unesco</b>   | United Nations Educational, Scientific and Cultural Organisation   |
| <b>USD</b>      | US dollar  |
| <b>VET</b>      | vocational education and training  |

# KEY TECHNICAL TERMS

|  |   |
|--|---|
| <b>Anticipation</b>                            | Denotes various qualitative and quantitative methods aimed at identifying future skill needs. Volume 4 considers only short- to medium-term anticipation, while long-term anticipation using forecasting or foresight methodologies (usually for more than five years) is covered by Volume 2.  |
| <b>Competency</b>                              | The proven or demonstrated individual capacity to use know-how, skills, qualifications or knowledge to meet usual and changing occupation situations and requirements (Unesco, TVET glossary <a href="http://www.unevoc.unesco.org/gloshttp://www.unevoc.unesco.org/tvetipedia.html?tx_drwiki_pi1%5Bkeyword%5D=glossary">http://www.unevoc.unesco.org/gloshttp://www.unevoc.unesco.org/tvetipedia.html?tx_drwiki_pi1%5Bkeyword%5D=glossary</a> ).   |
| <b>Employability</b>                           | Refers to the combination of factors which enable individuals to progress towards or get into employment, to stay in employment and to progress during career (Cedefop, 2008). It includes portable competencies and qualifications that increase an individual's capacity to make use of the education and training opportunities available to secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions (ILO, 2004).   |
| <b>Employment service provider</b>             | This guide refers to employment service providers in terms of public and private employment services whose main task is to aid job matching (see Volume 4).   |
| <b>Forecasting</b>                             | Quantitative forecasts produce information on quantitative aspects of future labour markets through statistical projections, econometric models or similar methods. Quantitative forecasts use data about the present and past to estimate future developments (Andersen et al., 2010). Forecasts may include alternative quantified scenarios based on various assumptions (see Volume 2).   |
| <b>Foresight studies</b>                       | Foresight studies are typically multi-disciplinary, mostly qualitative approaches. These are systematic future intelligence gathering and medium- to long-term vision building processes that aim to identify opportunities and areas of vulnerability to assist present-day decision-making. The key feature of foresights is their action orientation. Foresights may assume alternative futures in the form of scenarios (see Volume 2).   |
| <b>Job</b>                                     | A set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self-employment (ILO, 2012).  |
| <b>Labour market information</b>               | Any information concerning the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it (Mangozho, 2003). See Volume 1.   |
| <b>Labour market information system (LMIS)</b> | A set of institutional arrangements, procedures and mechanisms that are designed to produce labour market information (ILO, 1997). See Volume 1.  |
| <b>Matching</b>                                | Matching denotes approaches and actions that aim to increase the employability of the workforce and reduce skills shortages, including filling jobs with qualified jobseekers. This term is broader than job referral or placement.   |
| <b>Mismatch</b>                                | An encompassing term referring to different types of skill gaps and imbalances such as over-education, under-education, over-qualification, under-qualification, over-skilling, skills shortages and surpluses, skills obsolescence and so forth. Skills mismatch can be both qualitative and quantitative, referring both to situations where a person does not meet the job requirements and where there is a shortage or surplus of persons with a specific skill. Skills mismatch can be identified at the individual, employer, sector or economy level (Andersen et al., 2010). |



|   |   |
|---|---|
| <b>Occupation</b>                         | An occupation is defined as a set of jobs whose main tasks and duties are characterised by a high degree of similarity. A person may be associated with an occupation through the main job currently held, a second job or a job previously held (ILO, 2012).   |
| <b>Private employment agencies (PREA)</b> | Any natural or legal person, independent of the public authorities, which provides one or more labour market services such as job brokering, counselling services or any other assistance to job searching. This term includes temporary work agencies as per the definition below (ILO, 2007). See Volume 4.   |
| <b>Profiling</b>                          | An assessment of the employability of jobseekers performed by PES counsellors, often using IT and dedicated statistical tools. The rationale for profiling is to make labour market integration more effective by better targeting services and scarce resources. Profiling is frequently used to diagnose individual strengths and weaknesses as part of personal action planning to anticipate the risk of long-term unemployment. The overall purpose of profiling is to optimise the effectiveness and efficiency of PES services for jobseekers (Weber, 2011). See Volume 4. |
| <b>Public employment service (PES)</b>    | The core functions of public employment services include job search assistance and placement services; collection, analysis and dissemination of labour market information; development and implementation of targeted labour market programmes and services; the administration of unemployment insurance benefits, where applicable; and other regulatory services such as oversight of private employment agencies (ILO, 2009). See Volume 4.  |
| <b>Qualification</b>                      | A formal expression of the vocational or professional abilities of a worker which is recognised at international, national or sectoral levels. An official record (certificate, diploma) of achievement which recognises successful completion of education or training, or satisfactory performance in a test or examination.  |
| <b>Skill</b>                              | A term often used with very different meanings. In this guide, skill is understood as being the ability to carry out a mental or manual activity, acquired through learning and practice, where skill is an overarching term which includes knowledge, competency and experience as well as the ability to apply these in order to complete tasks and solve work-related problems.  |
| <b>Skills shortage</b>                    | Used in this guide as a quantitative term to describe a situation in which certain skills are short in supply, for example where the number of jobseekers with certain skills is insufficient to fill all available job vacancies.  |
| <b>Skill gap</b>                          | Used as a qualitative term to describe a situation in which the level of skills of the employee or a group of employees is lower than that required to perform the job adequately, or the type of skill does not match the job requirements (Cedefop, 2010).  |
| <b>Temporary work agency</b>              | A private or not-for-profit company that directly employs workers and hires them out to work in other enterprises under the supervision of the user (ILO, 2014). See Volume 4.  |

# REFERENCES AND RESOURCES

## **Cedefop, ETF, ILO. (2015). *Guide to anticipating and matching skills and jobs:***

Rihova, H. (2015). *Guide to skills anticipation and matching – volume 1: How to use labour market information*. Luxembourg: Publications Office. Jointly published by Cedefop, ETF and ILO.

Kriechel, B. et al. (2015). *Guide to skills anticipation and matching – volume 2: Developing skills foresights, scenarios and forecasts*. Luxembourg: Publications Office. Jointly published by Cedefop, ETF and ILO.

Wilson, R.A.; Tarjani, H.; Rihova, H. (2015). *Guide to skills anticipation and matching – volume 3: Working at sector level*. Luxembourg: Publications Office. Jointly published by Cedefop, ETF and ILO.

Andersen, T.; Feiler, L. (2015). *Guide to skills anticipation and matching – volume 4: What is the role of employment service providers*. Luxembourg: Publications Office. Jointly published by Cedefop, ETF and ILO.

Corbella, T.; Mane, F. (2015). *Guide to skills anticipation and matching – volume 5: Developing and running an establishment skills survey*. Luxembourg: Publications Office. Jointly published by Cedefop, ETF and ILO.

Andersen, T. et al. (2010). *Anticipating skill needs of the labour force and equipping people for new jobs. Which role for public employment services in early identification of skill needs and labour upskilling?* Report prepared for the European Commission.

Allen, J.; van der Velden, R. (2011). *The flexible professional in the knowledge society: new challenges for higher education*. Berlin: Springer. Higher education dynamics series; Vol. 35.

Baldauf, B.; Lwambuka, L. (1993). Findings of the graduates' and employers' surveys 1989. In: UDSM, Faculty of Engineering (ed.). *University education and engineering profession in Tanzania*. Dar es Salaam: UDSM, University of Dar es Salaam, pp. 9-100. Billorou, N. et al. (eds.) (2011). *Skills development impact evaluation: a practical guide*. Montevideo: ILO/Cinterfor. <http://guia.oitcinterfor.org/sites/default/files/guia/skills-development-impact-evaluation.pdf>

Bolaane, B. et al. (2010). *Tracer study on the employment outcomes of the vocational training graduates*. Gaborone: Botswana Training Authority. <http://www.bota.org.bw/sites/default/files/A%20TRACER%20STUDY%20BOTA-FINAL%20REPORT.pdf>

Cedefop (2008). *Terminology of European education and training policy: a selection of 100 key terms*. Luxembourg: Publications Office. [http://www.cedefop.europa.eu/EN/Files/4064\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/4064_en.pdf)

Cedefop (2010). *The skill matching challenge: analysing skill mismatch and policy implications*. Luxembourg: Publications Office.

Development Vision-Nepal (2012). *Tracer studies of technical skills development training graduates, 2008/09*. Kathmandu: Employment Fund Secretariat (EFS)/Helvetas intercooperation Nepal. <http://www.employmentfund.org.np/images/downloads/Tracer%20Study/Tra cer%20study%201%20-Final%20Report%202012.pdf>

Development Vision-Nepal (2013). *Tracer studies of employment fund supported training graduates of 2011*. Kathmandu: Employment Fund Secretariat (EFS)/Helvetas intercooperation Nepal. <http://www.employmentfund.org.np/images/downloads/Tracer%20Study/Tracer%20-%202011%20Study%20Report%20%202013.pdf>

DFP (2013). *Étude de suivi de l'insertion des lauréats de la formation professionnelle de la promotion 2009: rapport de synthèse [Tracer study of TVET graduates: synthesis report]*. Rabat: DFP, Département de la formation professionnelle.







Ehlert, Ch.; Kluge, J. (2011) *Guidelines for tracer studies and handbook of survey data management in TVET institutes*. Hanoi: General Directorate for Vocational Training (GDVT); Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. <http://www.tvet-vietnam.org/index.php/en/elibrary/remository-downloads/func-startdown/299/>

ETF (2013). *Appendix: tracer study training of the capacity building report*. Turin: European Training Foundation (mimeo).

ETF; CRRG (2012). *Tracer study of recent graduates from vocational education institutions in Kotayk and Ararat Marzes of Armenia: draft report*. Turin: ETF, European Training Foundation. [http://www.crrc.ge/uploads/files/research\\_projects/Tracer\\_Study\\_REPORT\\_eng.pdf](http://www.crrc.ge/uploads/files/research_projects/Tracer_Study_REPORT_eng.pdf)

European Commission (2008). *NACE Rev. 2: statistical classification of economic activities in the European Community*. Luxembourg: Publications Office. Eurostat methodologies and working papers. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF)

Fretwell, D. (2012). *Tracer survey of graduates from vocational training centers, community colleges, and college level diploma programmes at higher education institutions*. (unpublished).

Gaebel, M. et al. (2012). *Tracking learners' and graduates' progression paths: TRACKIT*. Brussels: European University Association. [http://www.eua.be/Libraries/Publications\\_homepage\\_list/EUA\\_Trackit\\_web.sflb.ashx](http://www.eua.be/Libraries/Publications_homepage_list/EUA_Trackit_web.sflb.ashx)

Helvetas (2009). *Measuring education's path to prosperity: tracer studies for vocational education and training programmes: a practical tool kit*. Zurich: Helvetas. [https://assets.helvetas.ch/downloads/tracer\\_study\\_manual\\_low\\_resolution\\_english\\_1.pdf](https://assets.helvetas.ch/downloads/tracer_study_manual_low_resolution_english_1.pdf)

IAG-TVET (2012). *Proposed indicators for assessing technical and vocational education and training*. Turin: ETF, ILO, Unesco. [http://www.etf.europa.eu/webatt.nsf/0/E112211E42995263C12579EA002EF821/\\$file/Report%20on%20indicators%20April%202012.pdf](http://www.etf.europa.eu/webatt.nsf/0/E112211E42995263C12579EA002EF821/$file/Report%20on%20indicators%20April%202012.pdf)

Ibarguen, C.; Abdul Cader, A. (2005). *Tracer study methodology manual: tracer methodology to measure longer-term impacts on children and families of interventions against child labour*. Geneva: ILO-IPEC.

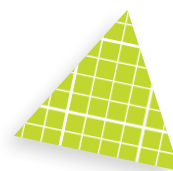
ILO (1997). *Private employment agencies convention No 181*. Convention concerning private employment agencies, adopted by the International Labour Organization at Geneva on 19.6.1997. [http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C181](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C181)

ILO (2004). *Human resources development: education, training and lifelong learning*. Recommendation No 195. Geneva: International Labour Organization. [http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100\\_ILO\\_CODE:R195](http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_ILO_CODE:R195)

ILO (2007). *Guide to private employment agencies: regulations, monitoring and enforcement*. Geneva: International Labour Organization.

ILO (2009). *ILO support for the role of public employment services in the labour market*. Paper submitted for debate and guidance at the Committee on employment and social policy, Geneva, on 9.10.2009. [http://www.ilo.org/wcmsp5/groups/public/@ed\\_norm/@relconf/documents/meetingdocument/wcms\\_115454.pdf](http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_115454.pdf)

ILO (2010). *A skilled workforce for strong, sustainable and balanced growth: a G20 training strategy*. Geneva: ILO. [http://www.ilo.org/wcmsp5/groups/public/-dgreports/-integration/documents/publication/wcms\\_151966.pdf](http://www.ilo.org/wcmsp5/groups/public/-dgreports/-integration/documents/publication/wcms_151966.pdf)





- ILO (2012). *International standard classification of occupations: structure, group definitions*. ISCO-08, Vol. 1. Geneva: International Labour Organization. [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_172572.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf)
- ILO (2014). *Guide to understanding the KILM*. Geneva: International Labour Organization.
- ILO-IPEC (2011). *Child labour impact assessment toolkit: tracer study manual*. Geneva: ILO-IPEC [http://www.ilo.org/ipec/Informationresources/WCMS\\_IPEC\\_PUB\\_8990/lang-en/index.htm](http://www.ilo.org/ipec/Informationresources/WCMS_IPEC_PUB_8990/lang-en/index.htm)
- JICA (2012). *Project for strengthening the capacity of Tumba College of Technology: summary of evaluation*. Tracer study implementation as a part of a JICA project (Japan International Cooperation Agency). [http://www.jica.go.jp/english/our\\_work/evaluation/tech\\_and\\_grant/project/term/africa/c8h0vm000001rp75-att/rwanda\\_2011\\_01.pdf](http://www.jica.go.jp/english/our_work/evaluation/tech_and_grant/project/term/africa/c8h0vm000001rp75-att/rwanda_2011_01.pdf)
- Kluge, J. et al. (2011). *Measuring employment effects of technical cooperation interventions: some methodological guidelines (second revised edition)*. Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. <http://www.giz.de/fachexpertise/downloads/giz2011-en-method-guide-measuring-employment-effects.pdf>
- Lamour, J. (1996). *Follow-up and tracer studies: a series of training modules and related exercises for educational planners and administrators*. Paris: Unesco, IIEP Teaching Materials.
- Makerere Institute of Social Research (2006). *Graduate tracer and employers' expectations in Uganda, 2002: report*. Kampala: NCHE, National Council for Higher Education. <http://www.unche.or.ug/wp-content/plugins/download-attachments/includes/download.php?id=252>
- Mangozho, N. (2003). *Current practices in labour market information systems development for human resources development planning in developed, developing and transition economies*. Geneva: International Labour Organization. EMP/Skills working paper No 13.
- Manukyan, S. (2012). *Tracer study: involvement of 2010-11 preliminary and middle level of vocational education system graduates in the labour market*. Yerevan: UNDP vocational education and training programme in Armenia (unpublished report).
- Melchiori, G.S. (ed.) (1988). *Alumni research: methods and applications*. San Francisco: Jossey-Bass. New directions for educational research series; No 60.
- Meyer, W.; Thomas, S. (2011). *Monitoring and measuring the results of interventions related to TVET and the labour market: a guideline for practitioners*. Bonn: GIZ, Deutsche Gesellschaft für internationale Zusammenarbeit. [http://www.youtheconomicopportunities.org/sites/default/files/uploads/resource/Guideline\\_M%26E\\_TVET.pdf](http://www.youtheconomicopportunities.org/sites/default/files/uploads/resource/Guideline_M%26E_TVET.pdf)
- Mugabushaka, A-M. et al. (eds.) (2007). *Higher education and work in Africa: a comparative empirical study in selected countries*. Kassel: International Centre for Higher Education Research. Werkstattberichte, No 69.
- Mugabi, S. et al. (2010). *Findings from the TVET graduates database*. Kigali: WDA, Workforce Development Authority. [http://www.lmis.gov.rw/scripts/publication/reports/TVET\\_graduates\\_database\\_findings\\_Final.pdf](http://www.lmis.gov.rw/scripts/publication/reports/TVET_graduates_database_findings_Final.pdf)
- Network/Columbus Association GRADUA2 (2006). *Graduate follow-up instruments and recommendations manual*. Mexico: Instituto Tecnológico y de Estudios Superiores de Monterrey.
- Psacharopoulos, G.; Hinchcliffe, K. (1983). *Tracer study guidelines*. Washington D.C.: World Bank, Education Department.
- Schomburg, H. (1995). *Standard instrument for graduate and employer surveys*. Kassel: WZ-I, Kassel University; GTZ.



Schomburg, H. (2003). *Handbook for graduate tracer studies*. Kassel: University of Kassel, Centre for Research on Higher Education and Work. <http://www.uni-kassel.de/wz1/proj/edwork/handbook.gkh>.

Schomburg, H. (2008). *Description of the research project: study conditions and professional success impact analysis of higher education study programmes and conditions in Germany*. Kassel (mimeo)

Schomburg, H. (2010). Research methodology issues and international experiences in career tracking. Contribution to the *Graduates Career Tracking Workshop III: graduate career tracking international and domestic practices, Budapest, 10 June 2010*.

Schomburg, H. (2011a). Employability and mobility of bachelor graduates: the findings of graduate surveys in ten European countries on the assessment of the impact of the Bologna reform. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 253-273.

Schomburg, H. (2011b). Bachelor graduates in Germany: internationally mobile, smooth transition and professional success. In: Schomburg, H.; Teichler, U. (eds). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 89-110.

Schomburg, H. (2012). Absolventenstudien im Netzwerk: Methoden und Ergebnisse der KOAB-Absolventenbefragungen. In: Kehm, B.M. et al. (eds). *Funktionswandel der Universitäten: Differenzierung, Relevanzsteigerung, Internationalisierung [Functional transformation of universities: differentiation, increasing relevance, internationalisation]*. Frankfurt: Campus, pp. 109-126.

Schomburg, H.; Teichler, U. (2006). *Higher education and graduate employment in Europe: results of graduates surveys from twelve countries*. Dordrecht: Springer. Higher education dynamics, No 15.

Schomburg, H.; Teichler, U. (eds) (2011). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers.

Syafiq, A.; Fikawati, S. (2012). *Progress and development of tracer study in Indonesia: case study University of Indonesia tracer study 2008-09*. Jakarta: UI-Press.

Teichler, U. (eds). *Careers of university graduates: views and experiences in comparative perspective*. Dordrecht: Springer 2007 (Higher Education Dynamics; No 17).

TESDA (2010). *Impact evaluation study of TVET programmes: 2008*. Manila: TESDA, Technical Education and Skills Development Authority. <http://www.tesda.gov.ph/uploads/File/RelatedTvetInfo/2008%20Impact%20Evaluation%20Study%20of%20TVET%20Programs.pdf>

United Nations (2008). *International standard industrial classification of all economic activities: revision 4*. New York: United Nations. Statistical papers, Series M; No 4/Rev. 4. [http://unstats.un.org/unsd/publication/seriesM/seriesm\\_4rev4e.pdf](http://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf)

Weber, T. (2011). Profiling systems for effective labour market integration. Thematic synthesis paper presented at the conference on *Profiling systems for effective labour market integration, Brussels, 11 and 12 May 2011*.

Weber, K.E.; Tiwari, I.P. (1992). *Tracer study design: a concept paper*. Bangkok: Asian Institute of Technology. AIT research report, No 247.

Witmer, A. (2008). The Swiss graduates survey. Paper presented at the fifth Conference of the *German graduate surveys network, Kassel University, Germany, 4 and 5 June 2008*.



## Weblinks

Proflex: *El profesional flexible en la sociedad del conocimiento [the flexible professional in the knowledge society]*: <http://www.encuesta-proflex.org/>

SAVOT2: *The project for improvement of basic skills and vocational training in Southern Sudan: phase II*. [http://www.jica.go.jp/project/english/south\\_sudan/002/](http://www.jica.go.jp/project/english/south_sudan/002/)

ILO: *School-to-work transition survey*: [http://www.ilo.org/employment/areas/WCMS\\_140862/lang-en/index.htm](http://www.ilo.org/employment/areas/WCMS_140862/lang-en/index.htm)

ILO: *Work4Youth project national reports*

<http://www.ilo.org/employment/areas/youth-employment/work-for-youth/publications/national-reports/lang-en/index.htm>

ISCO: *Welcome to the ISCO website*: <http://www.ilo.org/public/english/bureau/stat/isco/>

ISCO-08: *Structure and preliminary correspondence with ISCO-88*: <http://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm>

ETF: Match – innovation and learning project: [http://etf.europa.eu/web.nsf/pages/PRJ\\_2012\\_WP12\\_40\\_17\\_EN](http://etf.europa.eu/web.nsf/pages/PRJ_2012_WP12_40_17_EN)

Alma Laurea: inter-university consortium connecting university, labour market and professionals (IT) <https://www.almalaurea.it/en>

GIZ: *Labour market-oriented education and training* <http://www.giz.de/en/worldwide/18871.html>

GIZ: *SED-TVET: Sustainable economic development through technical and vocational education and training* <http://www.giz.de/en/worldwide/16755.html>

Trained in Vietnam: *Vietnamese-German Cooperation in TVET: Tracer Study, a successfully piloted initiative* <http://www.tvet-vietnam.org/index.php/en/news/40-general/270-vietnamese-german-cooperation-in-tvet-tracer-study-a-successfully-piloted-initiative>

Romanian tracer study: *University graduates and labour market* <http://www.absolvent-univ.ro/home.aspx>

Congrad: *project description*: conducting graduate surveys and improving alumni services for enhanced strategic management and quality improvement <http://www.congrad.org/project-description/>

Technische Universität Berlin: Absolventenbefragungen: *information on the graduate survey*: [http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/information\\_on\\_the\\_graduate\\_survey/parameter/en/](http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/information_on_the_graduate_survey/parameter/en/)

Technische Universität Berlin: Absolventenbefragungen: *Objectives of the graduate survey*: [http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/objectives\\_of\\_the\\_graduate\\_survey/parameter/en/](http://www.tu-berlin.de/qualitaet/evaluation/absolventenbefragungen/objectives_of_the_graduate_survey/parameter/en/)

Eurostat: *the NUTS classification*. [http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts\\_nomenclature/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction)

Eurostat: *Glossary: NACE* [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Glossary:Statistical\\_classification\\_of\\_economic\\_activities\\_in\\_the\\_European\\_Community\\_%28NACE%29](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_%28NACE%29)

# LITERATURE

## Handbooks and guides

|                                 |  |
|---------------------------------|--|
| Billorou et al. (2011)          | Network/Columbus Association GRADUA2 (2006). |
| Ehlert and Kluge (2011)         | Psacharopoulos and Hinchcliffe (1983)        |
| Gaebel et al. (2012)            | Schomburg (1995)                             |
| IAG-TVET (2012)                 | Schomburg (2003)                             |
| Ibarguen and Abdul Cader (2005) | Weber and Tiwari (1992)                      |
| ILO-IPEC (2011)                 | Helvetas (2007)                              |
| Kluge (2011)                    |  |
| Lamour (1996)                   |  |
| Macchi et al. (2009)            |  |
| Melchiori (1988)                |  |

## Tracer studies

### Africa – Higher education

- Al-Samarrai, S.; Bennell, P. (2003). *Where has all the education gone in Africa? Employment outcomes among secondary school and university leavers*. Brighton: Institute of Development Studies.
- Mugabushaka, A-M. et al. (eds.) (2007). *Higher education and work in Africa: a comparative empirical study in selected countries*. Kassel: International Centre for Higher Education Research. Werkstattberichte, No 69.
- Teichler, U. (2007). Background and aims of the analysis of African graduates' employment and work. In: Mugabushaka, A-M. et al. (eds.). *Higher education and work in Africa: a comparative empirical study in selected countries*. Kassel: International Centre for Higher Education Research. Werkstattberichte, No 69.

### Asia

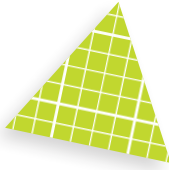
- UNESCO (2012a). *Graduate employability in Asia*. Bangkok: Unesco. <http://unesdoc.unesco.org/images/0021/002157/215706e.pdf>
- UNESCO (2012b). *School-to-work transition information bases*. Bangkok: UNESCO. Asia-Pacific education system review series; No 6. <http://unesdoc.unesco.org/images/0021/002166/216661e.pdf>

### Australia

- Australian graduate survey (GCA) <http://www.graduatecareers.com.au/research/surveys/australiangraduatesurvey/>
- Beyond graduation survey (BGS) <http://www.graduatecareers.com.au/research/surveys/beyondgraduationsurvey/>

### Armenia – TVET

ETF and CRRC (2012); Manukyan (2012)



### **Costa Rica**

- Consejo nacional de rectores [national council of rectors]. <http://www.conare.ac.cr/>

### **Czech Republic**

- Ryška, R.; Zelenka, M. (2011). Professional success due to scarcity? Bachelor graduates in the Czech Republic. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 69-88.

### **Europe**

**Hegesco:** Schomburg (2011a).

**Cheers:** Schomburg and Teichler (2006)

**Reflex:** Allen and van der Velden (2011)

**Trackit:** Gaebel et al. (2012)

### **France – Higher education**

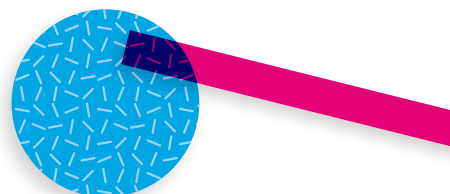
- Giret, Jean-François; Guégnard, Christine and Michot, Claire: The Vocationalisation of University Programmes in France: Its Consequences for Employability and Mobility. In: Schomburg, H.; Teichler, U. (eds). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 113-128.
- Céreq national graduate surveys: [http://www.cereq.fr/index.php/menus/pied\\_de\\_page/base\\_de\\_donnees/Enquetes-d-insertion-Generation](http://www.cereq.fr/index.php/menus/pied_de_page/base_de_donnees/Enquetes-d-insertion-Generation)

### **Georgia – TVET**

ETF (2013); Fretwell (2012)

### **Germany – Higher education**

- Schomburg (2011b)
- Schomburg, H.; Teichler, U (2005). Increasing potentials of alumni research for curriculum reforms: some experiences from a German research institute. In: *Weerts, D.; Vidal, J. (eds). Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 31-48.
- HIS studies: [http://www.dzhw.eu/en/bereiche/ab22/index\\_html](http://www.dzhw.eu/en/bereiche/ab22/index_html)
- KOAB studies: *the graduate survey cooperation project*: <http://koab.uni-kassel.de/en/koab.html>
- Bavarian studies: *BAP, the Bavarian graduate panel*: <http://www.bap.ihf.bayern.de/>





## Ghana

- Batse Z.M.K; Gyeke, O. (1992). *Graduate tracer study: a study of employed and unemployed graduates in Ghana*. Report of the Institute for Statistical, Social and Economic Research, University of Ghana, Legon for the Ministry of Education, Higher Education Division.
- Djangmah (1999). *The challenge of further vocationalising university Education in Ghana: a survey of university graduates*. (unpublished report).

## Hungary

- Kerégyártó, S. (ed.). *Hungarian graduates 2011*. Education 2013.
- Kiss, L.; Veroszta, Z. (2011). Bachelor graduates in Hungary in the transitional period of higher education system. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 129-142.

## Indonesia – Higher education

- Syafiq and Fikawati (2012).
- Sitepu, I.V.R. (2011). *Competencies of higher education graduates: a case of Universitas Kristen Indonesia*. (Dissertation University of Kassel). <http://d-nb.info/1037849906/34>
- Indotrace: *Indonesia tracer study network*: <http://www.indotrace.ui.ac.id/>

## Italy – Higher education

- Cammelli, A. et al. (2011). Mixed outcomes of the Bologna process in Italy. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 143-170.
- Cammelli, A. (2012). *14th Alma Laurea report on graduates' employment conditions*. [http://www.almalaurea.it/sites/almalaurea.it/files/docs/universita/occupazione/occupazione10/sintesi\\_en.pdf](http://www.almalaurea.it/sites/almalaurea.it/files/docs/universita/occupazione/occupazione10/sintesi_en.pdf)
- Alma Laurea: inter-university consortium connecting university, labour market and professionals. <https://www.almalaurea.it/en>

## Kenya – Higher education

- Kimani, G.N.; Kinyanjui, J.W. (1999). *Assessment of the effectiveness of the bachelor of education programme (B.Ed.Arts) in meeting job needs of graduates of University of Nairobi* (unpublished report).
- Karugu (2001). *Higher education and work: survey of graduates of Kenyatta University* (unpublished report).

## Lao PDR – TVET

- Bohlmann, T. (2013). *Current situation of the TVET sector in Lao PDR with special emphasis on the education of vocational teachers*. [http://www.academia.edu/5079889/Current-Situation\\_TVET-Sector\\_Lao\\_PDR-2013-11-12](http://www.academia.edu/5079889/Current-Situation_TVET-Sector_Lao_PDR-2013-11-12)





### **Latin America – Higher education**

- Proflex: *El profesional flexible en la sociedad del conocimiento [the flexible professional in the knowledge society]*: <http://www.encuesta-proflex.org>

### **Malawi – Higher education**

- Dubbey, J.M. et. Al. (1990). *University of Malawi: tracer study*.
- Zembere S.N.; Chinyama, N.P.M (1996). *The University of Malawi Graduate tracer study*. Blantyre: University of Malawi.

### **Mauritius – Higher education**

- TEC (2012). *Graduate tracer study 2011: a preliminary report*. Rose Hill: TEC, Tertiary Education Commission [http://tec.intnet.mu/pdf\\_downloads/pubrep/gts\\_premrep\\_feb2012.pdf](http://tec.intnet.mu/pdf_downloads/pubrep/gts_premrep_feb2012.pdf)
- TEC (2009). *Graduate tracer study 2008*. Rose Hill: TEC, Tertiary Education Commission [http://www.tec.mu/pdf\\_downloads/pubrep/Graduate%20Tracer%20Study%202008.pdf](http://www.tec.mu/pdf_downloads/pubrep/Graduate%20Tracer%20Study%202008.pdf)

### **Netherlands**

- Allen, J.; Coenen, J. (2011). Employability and mobility of bachelor graduates in the Netherlands. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 171-184.
- School leaver surveys: <http://roastatistics.maastrichtuniversity.nl/SISOnline/Home.aspx> (in Dutch)

### **Nigeria – Higher education**

- Omoifo, C.N. et al. (1996). *Education and achievement in the early career of the University of Benin graduates*. Report of the 1996 University of Benin graduates' tracer study. (unpublished report).
- Omotosho, J. (2000). *Higher education and work: a survey of alumni of the University of Ilorin who graduated between 1985 and 1994*. (unpublished Report)
- Ugwuonah G.E.; Omeje, K.C. (1998). *Final report of tracer study research project on higher education and work*. Enugu: Institute for Development Studies, University of Nigeria, Enugu Campus.
- Anyanwu G.A.; Iloeje, I.C. (1999). *Graduates' employment survey: a tracer study of the graduates of the faculties of arts and agriculture at the University of Nigeria, Nsukka*. (unpublished report).

### **Norway – Higher education**

- Støren L.A. et al. (2011). Employability and mobility of Norwegian graduates post Bologna. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 185-208.

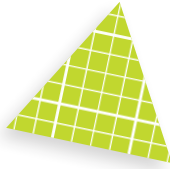
### **Poland – Higher education**

- Grotkowska, G. (2011). The employability and mobility of bachelor graduates in Poland. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 211-228.

### **Philippines – TVET**

TESDA (2010).





### **Rwanda – TVET**

JICA (2012); Mugabi (2010)

### **South Africa – TVET**

- Bennell, P.; Monyokolo, M. (1994). The lost generation? Employment outcomes among high school graduates in South Africa. *International journal of educational development*, Vol. 14, No 2, pp. 195-206.
- Cosser, M. et al. (eds) (2003). *Technical college responsiveness: learner destinations and labour market environments in South Africa*. Cape Town: HSRC Publishers. <http://www.hsrcpress.ac.za/product.php?productid=2057&freedownload=1>

### **South Africa – Higher education**

- CHEC (2013). *Pathways from university to work: a graduate destination survey of the 2010 cohort of graduates from the Western Cape Universities*. Wynberg: CHEC, Cape Higher Education Consortium. <http://www.chec.ac.za/files/CHEC%20Graduate%20Survey%20FULL%20REPORT%20WEB.pdf>
- CHEC, Cape Higher Education Consortium  
<http://www.chec.ac.za/>

### **South Sudan – TVET**

- SAVOT: *the project for improvement of basic skills and vocational training (Phase II)*. Tracer survey 2012, November 2012 [http://www.jica.go.jp/project/english/south\\_sudan/002/](http://www.jica.go.jp/project/english/south_sudan/002/)

### **Spain – Higher education**

- Mora, J.-G.; Vidal, J. (2005). The emerging uses of alumni research in Spain. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 19-29.

### **Switzerland – Higher education**

- Swiss Statistics: *surveys, sources – graduate survey: News*: [http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen\\_\\_quellen/blank/blank/bha/00.html](http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen__quellen/blank/blank/bha/00.html)

### **Tanzania – Higher education**

- Al-Samarrai, S.; Reilly, B. (2005). *Education, employment and earnings of secondary school leavers in Tanzania: evidence from a tracer study*. Brighton: Poverty Research Unit at Sussex, University of Sussex. PRUS Working paper; No 31
- Baldauf and Lwambuka (1993).
- Kajjage, E.S. (2000). *Faculty of commerce and management graduates and their employers: a tracer study*. Dar es Salaam: University of Dar es Salaam.
- Winkler, H. et al. (1992). *Engineers in Tanzania: a secondary analysis – Graduate and employer survey 1985*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.





### Uganda – Higher education

- Mayanja, M.K. et al. (1999). *A comparative study of Makerere University graduates from the faculties of arts and science*. (unpublished Report)
- Makerere Institute of Social Research (2006).

### United Kingdom – Higher education

- Brennan, J. et al. (2005). Alumni studies in the United Kingdom. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 83-94.
- Little, B. (2011). The UK bachelor's degree: a sound basis for flexible engagement with an unregulated labour market? In: Schomburg, H.; Teichler, U. (eds). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 231-252.

### United States – Higher education

- Cabrera, A.F. et al. (2005). Making an impact with alumni surveys. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 5-16.
- Ewell, P.T. (2005). Alumni studies as instruments of public policy: the US experience. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 19-29.

### Zimbabwe

- Bennell, P.; Ncube, M. (1994). Jobs for the boys? The employment experiences of secondary school-leavers in Zimbabwe. *Journal of southern African studies*, Vol. 20, No 2, pp. 301-15.
- Bennell, P.; Ncube, M. (1993). Education and training outcomes: university graduates in Zimbabwe during the 1980s. *Zimbabwe journal of educational research*, Vol. 5, No 2, pp. 107-123.

### Methodology of tracer studies

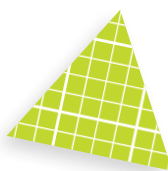
Bollen, K.A. (1989). *Structural equations with latent variables*. New York: Wiley.

De Leeuw, E.D. et al. (2009). *International handbook of survey methodology*. Boca Raton: CRC Press.

Dillman, D.A. (1978). *Mail and telephone surveys: the total design method*. New York 1978.

Dillman, D. (2007). *Mail and internet surveys. The tailored design method*. Second edition. Hoboken, New Jersey: Wiley.

Eraut, M.R. 'Educational objectives.' In: Wallberg, H.; Haertel, G. (ed.). *International encyclopedia of educational evaluation*. Oxford: Pergamon Press.





- Fink, A.; Kosecoff, J. (1985). *How to conduct surveys: a step-by-step guide*. London: Sage Publications.
- Folster, F.J. (1987). *Survey research methods*. London: Sage Publications.
- Groves, R.M. et al. (2009). *Survey methodology*. Second edition. Hoboken: Wiley.
- Hayduk, L.A. (1987). *Structural equation models with LISREL*. Baltimore: Johns Hopkins University.
- Porter, S.R. (2004). Raising response rates: what works? In: Porter, S.R. (eds). *Special issue: overcoming survey research problems*. San Francisco: Jossey-Bass. New directions for institutional research; No 121, pp. 5-21.
- Rossi, P.H.; Freeman, H.E. (1993). *Evaluation: a systematic approach. Fifth edition*. Newbury Park: Sage Publications.
- Umbach, P.D. (2004). *Web surveys: best practices*. In: Porter, S.R. (eds). *Special issue: overcoming survey research problems*. San Francisco: Jossey-Bass. New directions for institutional research; No 121, pp. 23-38.
- Wallberg, H.J. Haertel, G. (ed.) (1990). *The international encyclopedia of educational evaluation*. Oxford: Pergamon Press.
- Willms, D.J. (1992). *Monitoring school performance: a guide to educators*. Washington, D.C.: Falmer Press.

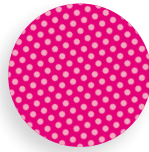
## Education and employment

- Allen, J.; Van der Velden, R. (eds). *The flexible professional in the knowledge society: new challenges for higher education*. Dordrecht: Springer, Higher education dynamics.
- Astin, A.W. (1991). *Assessment for excellence: the philosophy and practice of assessment and evaluation in higher education*. New York: Macmillan.
- Becker, G.S. (1993). *Human capital. Third edition*. London: University of Chicago Press.
- Borden, V.M.H. (2005). Using alumni research to align programme improvement with institutional accountability. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 61-72.
- Brennan, J. (1985). Preparing students for employment. *Studies in higher education*, Vol. 2, pp. 151-162.
- Brennan, J. et al. (1993). *Students, courses and jobs*. London: Jessica Kingsley.
- Brennan, J. et al. (1996). *Higher education and work: a conceptual framework*. London: Jessica Kingsley.
- Cabrera, A. F. et al. (2005). Making an impact with alumni surveys. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 5-17.
- Dore, R. (1976). *The diploma disease: education, qualification and development*. London: Georg Allen and Unwin.
- ETF (2008). *Transition from education to work in EU neighbouring countries*. Torino: ETF, European Training Foundation.





- Eurostat (2011). *Key figures on Europe 2011*. Luxembourg: Publications Office. European Union pocketbooks.
- Ewell, P.T. Alumni studies as instruments of public policy: the US experience. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 19-29.
- Gangl, M. (2002). Changing labour markets and early career outcomes: labour market entry in Europe over the past decade. *Work, employment and society*, Vol. 16, No 1, pp. 67-90.
- Gangl, M. et al. (2003). Conclusions: explaining cross-national differences in school-to-work transitions. In: Walter M.; Gangl, M. (eds). *Transitions from education to work in Europe: the integration of youth into EU labour markets*. Oxford: Oxford University Press, pp. 277-305.
- Hannan, D.F.; et al. (1996). *Cross-national research on school to work transitions: an analytical framework*. [http://www.econ.upf.edu/~montalvo/sec1034/school\\_work\\_ocde.pdf](http://www.econ.upf.edu/~montalvo/sec1034/school_work_ocde.pdf)
- Janson, K. et al. (2009). *The professional value of Erasmus mobility: the impact of international experience on former students' and on teachers' careers*. Bonn: Lemmens.
- Kehm, B.M. et al. (eds) (2012). *Differenzierung, Internationalisierung, Relevanzsteigerung: Hochschulen im Funktionswandel*. Frankfurt a. M.: Campus.
- Matsumoto, M.; Elder, S. (2010). *Characterising the school-to-work transitions of young men and women: evidence from the ILO school-to-work transition surveys*. Geneva: ILO Employment working paper; No 51. [http://www.ilo.org/public/turkish/region/eurpro/ankara/areas/youth/2\\_12\\_ilo\\_school\\_to\\_work\\_transition\\_surveys.pdf](http://www.ilo.org/public/turkish/region/eurpro/ankara/areas/youth/2_12_ilo_school_to_work_transition_surveys.pdf)
- Mora, J.G.; Vidal, J. (2005). The emerging uses of alumni research in Spain. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126pp. 73-82.
- Mora, J.-G. et al. (eds) (2013). *Empleo y trabajo de los graduados universitarios: conclusiones de diferentes estudios [Work and employment of college graduates: conclusions from different studies]*. Barcelona: Octaedro-ICE, Universitat de Barcelona.
- Müller, W.; Gangl, M. (eds) (2003). *Transitions from education to work in Europe: the integration of youth into EU labour markets*. Oxford: Oxford University Press.
- OECD (2000). *From initial education to working life: making transitions work*. Paris: OECD.
- OECD (2010). *Synthesis report of the OECD reviews of vocational education and training*. Paris: OECD, OECD reviews of vocational education and training.
- Ryan, P. (2001). The school-to-work transition: a cross-national perspective. *Journal of economic literature*, Vol. 39, pp. 34-92.
- Sanyal, B.C. (1987). *Higher education and employment: an international comparative analysis (an IIEP Research Project)*. London: Falmer Press.
- Schomburg, H. (2011). The professional work of graduates. In: Allen, J.; Van der Velden, R. (eds). *The flexible professional in the knowledge society: new challenges for higher education*. Dordrecht: Springer, Higher education dynamics, pp. 55-81.



Schomburg, H. (2011). Bachelor graduates in Germany: internationally mobile, smooth transition and professional success. In: Schomburg, H.; Teichler, U. (eds). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 89-110.

Schomburg, H. (2007). Work orientation and job satisfaction. In: Teichler, Ulrich (eds). *Careers of university graduates: views and experiences in comparative perspective*. Dordrecht: Springer, Higher education dynamics; No 17, pp. 247-264.

Schomburg, H. (2011). Employability and mobility of bachelor graduates: the findings of graduate surveys in ten European countries on the assessment of the impact of the Bologna reform. In: Schomburg, H.; Teichler, U. (eds.). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers, pp. 253-273.

Schomburg, H. (2012). Hochschule und Beruf. In: Kehm, B.M. et al. (eds). *Funktionswandel der Universitäten. Differenzierung, Relevanzsteigerung, Internationalisierung*. Frankfurt: Campus, pp. 41-60.

Schomburg, H.; Teichler, U. (eds) (2011). *Employability and mobility of bachelor graduates in Europe: key results of the Bologna process*. Rotterdam: Sense Publishers.

Schomburg, H.; Teichler, U. (2005). Increasing potentials of alumni research for curriculum reforms: some experiences from a German research institute. In: Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126, pp. 31-48.

Shavitt, Y.; Müller, W. (1998). *From school to work: a comparative study of educational qualifications and occupational destinations*. Oxford: Clarendon Press.

Teichler, U. (1999). Research on the relationships between higher education and the world of work: past achievements, problems and new challenges. *Higher education*, No 38, pp. 169-90.

Teichler, U.; Schomburg, H. (2012). Analysing the results of study in higher education and the requirements of the world of work. In: Blömeke, S. et al.; (eds). *Modeling and measuring competencies in higher education*. Rotterdam: Sense Publishers.

Teichler, U. (1996). Higher education and employment: Twenty-five years of changing debates and realities. *Higher education management*, Vol. 8, No 3, pp. 25-37.

Teichler, U. (2009). *Higher education and the world of work: conceptual frameworks, comparative perspectives, empirical findings*. Rotterdam: Sense Publishers. Global perspectives on higher education.

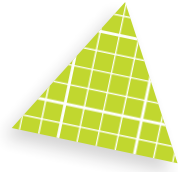
Weerts, D.; Vidal, J. (eds). *Enhancing alumni research: European and American perspectives*. San Francisco: Jossey Bass. New directions for institutional research; No 126.

Werquin, P. et al. (eds) (1997). *Youth transitions in Europe: theory and evidence*. Marseilles: Céreq.



---

# ANNEXES



|  |     |
|--|-----|
| ANNEX 1. Minimum version of specimen questionnaire for a TVET tracer study | 151 |
| ANNEX 2. Questionnaire modules for a TVET tracer study                     | 169 |
| ANNEX 3. Tables report with questionnaire and codebook                     | 199 |
| ANNEX 4. Data definition (SPSS syntax)                                     | 271 |
| ANNEX 5. Building of new variables (SPSS syntax)                           | 290 |





## ANNEX 1.

### Minimum version of specimen questionnaire for a TVET tracer study

#### Name of the VET Institution

#### Survey of Graduates of the year 2012 (Minimum version)

*Dear Graduates,*

*As head of the research group, I kindly request your participation in a survey of graduates who completed their studies in 2012.*

*We would like to find out what happened to you after you completed your studies. Did you find a job or are you still looking for a job, did your studies prepare you well for the workplace, and do you use the knowledge and skills you have learned during your studies?*

*The core objectives of the graduate survey are improving the study programmes and, more specifically, revision of the curricula.*

*Your information will be treated with strict confidentiality. The results will be published in such a way that identification of individual persons is excluded.*

*Results of this survey will be published on the web site of the (<http://XXX.YYY.XX>). At your request we will send you a printed version of the report with the main results of the survey.*

*Please return the completed questionnaire as soon as possible to the address mentioned below.*

*Thank you very much in advance for your kind support.*

*Mr. XXX  
(Project leader of the XXX graduate survey team)*

**Send the questionnaire to:**

**Name:** XXX  
**Postal address:** XXX  
**Phone:** XXX  
**Email:** XXX



## Explanatory Notes

How long does it take to fill in the questionnaire?

Most of you will need about half an hour, depending on the kind of experiences you have undergone during recent years.

We have developed a highly standardised questionnaire, which mainly expects you to mark boxes which refer to relevant answers. With this approach we hope that we have made it easy for you to answer the questions.

How to answer the questions?

Please answer all questions applicable to you. In some cases, you will note that the questionnaire suggests you disregard some questions not applicable to you (e.g. → **Please continue with question B7**).

Since the questionnaire will be captured with the help of a scanner, please fill it in legibly.

Please mark the most appropriate answer like this →

Example of a 5-point-scale

In some questions we have employed answer scales from 1 to 5 (e.g. 1 = very bad to 5 = very good).

→ Mark only one box for each item (row).

→ If you would like to correct your answer, make the wrong one black and mark and underscore the right one

| A7 To what extent were the following reasons important for your decision to study at the VET institution? Please respond to each factor on the five-point scale. |                                     |                                     |                                     |                                     |                          |  |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--|
|  | Not at all important                |                                     |                                     | Very important                      |                          |  |
|  | 1                                   | 2                                   | 3                                   | 4                                   | 5                        |  |
| 1  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Vicinity to home of parents or other relatives |
| 2  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Availability of scholarship                    |
| 3  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Availability/quality of accommodation          |

Open answers

Sometimes we leave space for you to write an answer (.....).  
If the space for your replies is not sufficient, please include an additional sheet of paper.

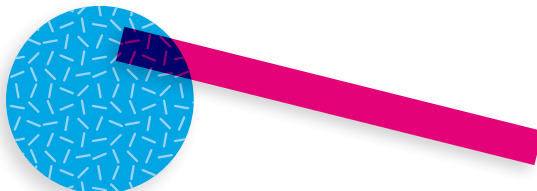
Your help to improve the survey is welcome

This questionnaire is used in different VET institutions with a wide range of different fields of study. We could not take into consideration every specific detail of study and work, which might be relevant for the survey. Therefore we would appreciate your comments and additional information.



*Overview of the content of the questionnaire*

|   |     |
|---|-----|
| <i>The course of studies at the XYZ VET institution</i>                               | 154 |
| <i>Internship and work experience during course of studies at the VET institution</i> | 154 |
| <i>Evaluation of study conditions and study provisions at the VET institution</i>     | 155 |
| <i>satisfaction with study</i>  | 156 |
| <i>After Graduation from the VET institution</i>                                      | 157 |
| <i>Employment and Work</i>  | 159 |
| <i>Work requirements</i>  | 162 |
| <i>Relationship between study and employment</i>                                      | 162 |
| <i>Work orientation and job satisfaction</i>  | 164 |
| <i>Vocational education/training before your study at the VET institution</i>         | 165 |
| <i>Further VET or Higher Education after study at the VET institution</i>             | 166 |
| <i>Further Vocational/Professional Training</i>                                       | 166 |
| <i>Demographic information</i>  | 167 |
| <i>Migration and Regional Mobility</i>  | 167 |
| <i>Your comments and recommendations</i>  | 168 |





**A The course of studies at the XYZ VET institution S1**

**A4 Which qualification did you achieve at the VET institution? Q4**

- 1  Certificate
- 2  Diploma
- 3  Other (please specify):

**A5 What was the name of the study programme at the VET institution? Q5**

- 1

**B Internship and work experience during course of studies at the VET institution S2**

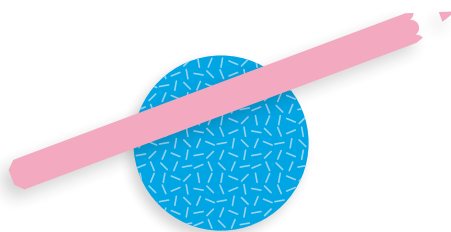
**B1 Did you do any internships during your course of studies (this does not refer to team projects, practical courses etc.)? Multiple answers possible Q13**

- 1  Yes
- 2  No

**B5 Were you employed during your study? Please include full-time as well as part-time work; excluded are internships. Q17**

- 1  Yes
- 2  No



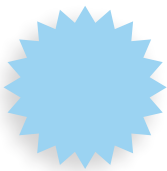


**C Evaluation of study conditions and study provisions at the VET institution S3**

**C2 How would you rate the study conditions and provisions you experienced at the VET institution? Q20**

|    | Not at all important     |                          |                          | Very important           |                          |   |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|    | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of classroom learning   |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Student recreational facilities on campus   |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of learning materials (e.g. books, internet access)                                    |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity for consultation with teaching staff  |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teaching quality of lecturers   |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Internship programme  |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Contacts with fellow students   |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chances for students to have an influence on VET institution policies                         |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Availability of technical equipment (e.g. lab equipment, measuring instruments, computer lab) |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of technical equipment  |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of teaching materials  |
| 12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of buildings  |
| 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Other (please specify):<br>.....  |





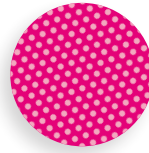
| <b>C4 How do you rate the following elements related to employment and work in your study course?</b> |                          |                          |                          |                          |                          | <b>Q22</b>  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|   | Very bad                 |                          |                          |                          | Very good                |   |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Preparation for work  |
| 2   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Subject matters (teaching contents) are up to date with regards to practical requirements |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practical experiences of teaching staff   |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Relationship between theory and practice  |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practice-oriented teaching contents   |
| 6   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mandatory internships   |
| 7   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Offers for acquisition of key competencies  |
| 8   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Support of employment/job search  |
| 9   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Support of internship search  |

**D satisfaction with study** **S4**

| <b>D2 Looking back, if you were free to choose again to what extent would you probably choose the same field of study?</b> |                          |                          |                          |                          |                          | <b>Q26</b> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
|  | Not at all               |                          |                          |                          | To a very high extent    |            |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 1  |                          |                          |                          |                          |                          |            |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |
| 3  |                          |                          |                          |                          |                          |            |

| <b>D3 Looking back, if you were free to choose again to what extent would you probably choose the same VET institution?</b> |                          |                          |                          |                          |                          | <b>Q27</b> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
|   | Not at all               |                          |                          |                          | To a very high extent    |            |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 1   |                          |                          |                          |                          |                          |            |
| 2   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |
| 3   |                          |                          |                          |                          |                          |            |

| <b>D4 In retrospect, to what extent are you satisfied with your studies in general?</b> |                          |                          |                          |                          |                          | <b>Q28</b> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
|   | Not at all               |                          |                          |                          | To a very high extent    |            |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 1   |                          |                          |                          |                          |                          |            |
| 2   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |
| 3   |                          |                          |                          |                          |                          |            |



**E After Graduation from the VET institution S5**

**E1 What applied to your situation in the first six months after graduating? Multiple answers possible Q29**

- 1  Employment
- 2  Self-employed / freelance work
- 3  Occasional job (just to earn money)
- 4  Internship
- 5  Further academic education (higher education)
- 6  Further vocational education/training
- 7  Housewife, househusband, family work
- 8  Not employed, but searching for a job
- 9  Military or civil service
- 10  Other (please specify):  
.....

**E2 When did you start your first job after graduation? Q30**

- 1  Before graduation
- 2  At the time of graduation
- 3  Less than 1 month after graduation
- 4  1 to less than 3 months after graduation
- 5  3 to less than 6 months after graduation
- 6  6 to less than 9 months after graduation
- 7  9 to less than 12 months after graduation
- 8  More than one year after graduation
- 9  I have not been employed since graduation

**E4 If you did not search for employment: what were your reasons? Multiple answers possible Q32**

- 1  I continued studying
- 2  I continued a job I had prior to studying
- 3  I found a job without searching
- 4  I became self-employed / a freelancer
- 5  Other (please specify):  
.....

*If you did not search for employment à Please continue with question XX F11*

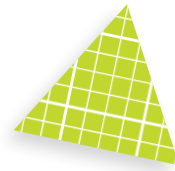


| <b>E6 How long have you searched for your first job?<br/>Include also job search period before graduation.</b> |  | <b>Q34</b> |
|--|--|------------|
|--|--|------------|

- |   |                          |                          |
|---|--------------------------|--------------------------|
| 1 | <input type="checkbox"/> | Less than 1 month        |
| 2 | <input type="checkbox"/> | 1 to less than 3 months  |
| 3 | <input type="checkbox"/> | 3 to less than 6 months  |
| 4 | <input type="checkbox"/> | 6 to less than 9 months  |
| 5 | <input type="checkbox"/> | 9 to less than 12 months |
| 6 | <input type="checkbox"/> | More than one year       |

| <b>E7 What was the most successful method for finding your first job? Choose only one answer</b> |  | <b>Q35</b> |
|--|--|------------|
|--|--|------------|

- |    |                          |   |
|----|--------------------------|---|
| 1  | <input type="checkbox"/> | Replied to job ads/announcements (e.g. newspaper, internet, notice) |
| 2  | <input type="checkbox"/> | With the help of family contacts of parents, relatives              |
| 3  | <input type="checkbox"/> | With help of personal contacts of friends, fellow students etc.     |
| 4  | <input type="checkbox"/> | Speculative application – independent contact to employers          |
| 5  | <input type="checkbox"/> | Through internships during my course of studies                     |
| 6  | <input type="checkbox"/> | Through internships after graduation                                |
| 7  | <input type="checkbox"/> | Through (side) jobs during the study                                |
| 8  | <input type="checkbox"/> | Through (side) jobs during after graduation                         |
| 9  | <input type="checkbox"/> | I was contacted by an employer                                      |
| 10 | <input type="checkbox"/> | Job fair  |
| 11 | <input type="checkbox"/> | Through the public job centre                                       |
| 12 | <input type="checkbox"/> | Through private job agencies  |
| 13 | <input type="checkbox"/> | Through internet (social) networks (e.g. FACEBOOK)                  |
| 14 | <input type="checkbox"/> | Through the career center of the VET institution                    |
| 15 | <input type="checkbox"/> | Through teaching staff at the VET institution                       |
| 16 | <input type="checkbox"/> | Not applicable, I did not find a job until now                      |
| 17 | <input type="checkbox"/> | Other (please specify):<br>.....                                    |



|          |                            |           |
|----------|----------------------------|-----------|
| <b>F</b> | <b>Employment and Work</b> | <b>S6</b> |
|----------|----------------------------|-----------|

|           |  |            |
|-----------|--|------------|
| <b>F1</b> | <b>What applies to your current situation? Multiple answers possible</b> | <b>Q39</b> |
|-----------|--|------------|

- |    |                          |   |
|----|--------------------------|---|
| 1  | <input type="checkbox"/> | Regular job                                   |
| 2  | <input type="checkbox"/> | Self-employed / freelance work                |
| 3  | <input type="checkbox"/> | Occasional job (just to earn money)           |
| 4  | <input type="checkbox"/> | Internship                                    |
| 5  | <input type="checkbox"/> | Further academic education (higher education) |
| 6  | <input type="checkbox"/> | Further vocational training                   |
| 7  | <input type="checkbox"/> | Housewife, househusband, family care          |
| 8  | <input type="checkbox"/> | Not employed, but searching for a job         |
| 9  | <input type="checkbox"/> | Military or civil service                     |
| 10 | <input type="checkbox"/> | Other (please specify):<br>.....              |

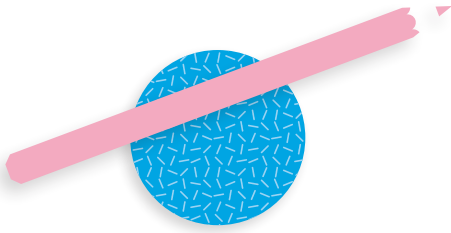
|           |   |            |
|-----------|---|------------|
| <b>F3</b> | <b>How many jobs (including your current one) have you had altogether since graduation?</b> | <b>Q41</b> |
|-----------|---|------------|

- |   |                          |  |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | No job, I have not been employed since graduation à Filter |
| 2 | <input type="checkbox"/> | One job  |
| 3 | <input type="checkbox"/> | Two jobs   |
| 4 | <input type="checkbox"/> | Three jobs   |
| 5 | <input type="checkbox"/> | More than three jobs                                       |

|   |  |            |
|---|--|------------|
| <i>If you are currently unemployed → Please continue with question H6</i> |  | <b>F12</b> |
|---|--|------------|

|           |   |            |
|-----------|---|------------|
| <b>F4</b> | <b>How many hours do you work per week?</b> | <b>Q42</b> |
|-----------|---|------------|

- |   |                          |                             |
|---|--------------------------|-----------------------------|
| 1 | <input type="checkbox"/> | Less than 20 hours per week |
| 2 | <input type="checkbox"/> | 21 to 30 hours              |
| 3 | <input type="checkbox"/> | 31 to 40 hours              |
| 4 | <input type="checkbox"/> | 41 to 50 hours              |
| 5 | <input type="checkbox"/> | More than 50 hours          |



| <b>F5 Are you permanently employed?</b> |   | <b>Q43</b> |
|---|---|------------|
| 1                                       | <input type="checkbox"/> Yes                                |            |
| 2                                       | <input type="checkbox"/> No                                 |            |
| 3                                       | <input type="checkbox"/> Not applicable, I am self-employed |            |

| <b>F8 In which region are you employed?</b> |  | <b>Q46</b> |
|---|--|------------|
| 1   |  |            |

| <b>F9 What type of employer do you work for?</b> |  | <b>Q47</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> Public/government                   |            |
| 2  | <input type="checkbox"/> Parastatal                          |            |
| 3  | <input type="checkbox"/> Private                             |            |
| 4  | <input type="checkbox"/> Self-employed                       |            |
| 5  | <input type="checkbox"/> Non-governmental organisation (NGO) |            |
| 6  | <input type="checkbox"/> International and diplomatic        |            |
| 7  | <input type="checkbox"/> Other (please specify):<br>.....    |            |

| <b>F10 In which economic sector are you currently employed (e.g. fisheries, agriculture, secondary education)?</b> |  | <b>Q48</b> |
|--|--|------------|
| 1  |  |            |

| <b>F11 What is your occupation/job title? (e.g. primary school teacher)</b> |  | <b>Q49</b> |
|---|--|------------|
| 1   |  |            |

| <b>F12 Outline the 3 main duties/work tasks.</b> |  | <b>Q50</b> |
|--|--|------------|
| 1  |  |            |
| 2  |  |            |
| 3  |  |            |







| <b>F13 What is your current gross monthly income?</b> |   | <b>Q51</b> |
|---|---|------------|
| 1   | <input type="checkbox"/> Less than \$ 100 |            |
| 2   | <input type="checkbox"/> \$ 100 - 150     |            |
| 3   | <input type="checkbox"/> \$ 151 - 200     |            |
| 4   | <input type="checkbox"/> \$ 201 - 250     |            |
| 5   | <input type="checkbox"/> \$ 251 - 300     |            |
| 6   | <input type="checkbox"/> \$ 300 - 350     |            |
| 7   | <input type="checkbox"/> \$ 351 - 401     |            |
| 8   | <input type="checkbox"/> \$ 401 - 450     |            |
| 9   | <input type="checkbox"/> More than \$ 450 |            |

| <b>F14 What kind of fringe/other benefit(s) do you receive? Multiple answers possible</b> |  | <b>Q52</b> |
|---|--|------------|
| 1   | <input type="checkbox"/> Housing (subsidy, rent allowance)                               |            |
| 2   | <input type="checkbox"/> Transportation (car/transport allowance)                        |            |
| 3   | <input type="checkbox"/> Health (medical aid, insurances)                                |            |
| 4   | <input type="checkbox"/> Education and training (staff development, family study rebate) |            |
| 5   | <input type="checkbox"/> Retirement (pension, gratuity)                                  |            |
| 6   | <input type="checkbox"/> None  |            |
| 7   | <input type="checkbox"/> Other (please specify):<br>.....                                |            |

| <b>F15 How many employees work in your company / organisation in total? Please estimate the number.</b> |   | <b>Q53</b> |
|---|---|------------|
| 1   | <input type="checkbox"/> 1 to 9 employees       |            |
| 2   | <input type="checkbox"/> 10 to 49 employees     |            |
| 3   | <input type="checkbox"/> 50 to 99 employees     |            |
| 4   | <input type="checkbox"/> 100 to 249 employees   |            |
| 5   | <input type="checkbox"/> 250 to 999 employees   |            |
| 6   | <input type="checkbox"/> 1000 or more employees |            |



**G Work requirements S7**

**G1 To what extent are the following skills / competencies required in your current employment? Q55**

|    | Not at all               |                          |                          |                          |                          |  | To a very high extent    |                          |                          |                          |   |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|---|
|    | 1                        | 2                        | 3                        | 4                        | 5                        |  | 1                        | 2                        | 3                        | 4                        | 5   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mastery of my field/subject specific knowledge    |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to develop new ideas and solutions        |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to assert my authority                    |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to adapt to changing conditions           |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to mobilise the capacities of others      |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analytical thinking                               |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Willingness to question my and others' ideas      |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work efficiently towards a goal        |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to organise my work processes efficiently |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work productively with others          |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to perform well under pressure            |

**H Relationship between study and employment S8**

**H1 To what extent are the knowledge and skills you acquired during study utilised in your current job? Q56**

|   | Not at all               |                          |                          |                          |                          |  | To a very high extent    |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**H2 In your opinion, what field of study is most appropriate for your current job? Q57**

|   |                          |                              |
|---|--------------------------|------------------------------|
| 1 | <input type="checkbox"/> | Exclusively own field        |
| 2 | <input type="checkbox"/> | Own or a related field       |
| 3 | <input type="checkbox"/> | A completely different field |
| 4 | <input type="checkbox"/> | No particular field          |

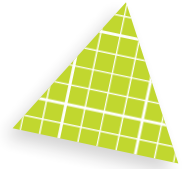


| <b>H3 In your opinion, which qualification/degree level matches best for your current job?</b> |  | <b>Q58</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> A higher degree/ qualification    |            |
| 2  | <input type="checkbox"/> My degree/qualification           |            |
| 3  | <input type="checkbox"/> A lower degree/qualification      |            |
| 4  | <input type="checkbox"/> No degree/qualification necessary |            |

| <b>H4 To what extent is your professional position appropriate to your course of study?</b> |                          |                          |                          |                          |                          | <b>Q59</b> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
|   | Not at all               |                          |                          |                          | To a very high extent    |            |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 1   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |

| <b>H5 If your job is not closely related to your course of study, why did you choose this job?</b> |   | <b>Q60</b> |
|--|---|------------|
| 1  | <input type="checkbox"/> Not applicable, my job is closely related to my course of study                                      |            |
| 2  | <input type="checkbox"/> My current job is only a temporary stepping stone, I am still searching for professional orientation |            |
| 3  | <input type="checkbox"/> I have not found an appropriate job (yet)  |            |
| 4  | <input type="checkbox"/> I receive a higher salary in my current job  |            |
| 5  | <input type="checkbox"/> My current job offers more security  |            |
| 6  | <input type="checkbox"/> My interests have changed  |            |
| 7  | <input type="checkbox"/> My current job allows a flexible time schedule   |            |
| 8  | <input type="checkbox"/> My current job allows me to work in a favoured geographical place                                    |            |
| 9  | <input type="checkbox"/> My current job allows me to take into consideration the interests of my family/children              |            |
| 10   | <input type="checkbox"/> Other (please specify):<br>.....   |            |



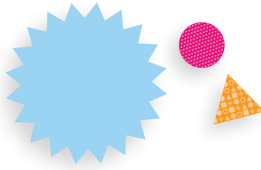


| <b>H6 Altogether: How do you rate the usefulness of your studies?</b> |                          |                          |                          |                          |                          | <b>Q61</b>   |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|   | Not at all useful        |                          |                          |                          | Very useful              |  |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for finding an adequate job after finishing your studies?      |
| 2   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for fulfilling your present professional tasks, if applicable? |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for your future professional development/ career?              |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for the development of your personality?                       |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for the economic development of your country?                  |

**I Work orientation and job satisfaction** **S9**

*If you are not employed → Please continue with question I3* **F13**

| <b>I2 To what extent do the following aspects apply to your current job situation?</b> |                          |                          |                          |                          |                          | <b>Q63</b>   |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|  | Not at all               |                          |                          |                          | To a very high extent    |  |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Interesting work tasks   |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Work autonomy  |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear and regulated work tasks   |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities for applying acquired competencies                         |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Job security   |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Social status and recognition  |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to realise own ideas                                       |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good work atmosphere   |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities of further professional advancement                        |
| 10   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | High salary  |
| 11   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibility for providing social influence                               |
| 12   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | To have a challenging job  |
| 13   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good career advancement prospects  |
| 14   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assumption of coordination and management tasks                          |
| 15   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to do something useful for the general public              |
| 16   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good conditions for managing both work-related and family-related issues |
| 17   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sufficient time for leisure activities                                   |



**I3 What changes in employment and further education/training do you plan to achieve within the next three years? Multiple answers possible Q64**

|    |                          |   |
|----|--------------------------|---|
| 1  | <input type="checkbox"/> | to change my employer                                     |
| 2  | <input type="checkbox"/> | to obtain higher income                                   |
| 3  | <input type="checkbox"/> | to change my area of work assignment                      |
| 4  | <input type="checkbox"/> | to restart full-time study                                |
| 5  | <input type="checkbox"/> | to study part-time  |
| 6  | <input type="checkbox"/> | to start my own business                                  |
| 7  | <input type="checkbox"/> | to get employed   |
| 8  | <input type="checkbox"/> | to discontinue employment                                 |
| 9  | <input type="checkbox"/> | to achieve more secure employment                         |
| 10 | <input type="checkbox"/> | to achieve better use of my knowledge                     |
| 11 | <input type="checkbox"/> | to obtain a better chance of pursuing continuous learning |
| 12 | <input type="checkbox"/> | to take over a job more closely linked to my study        |
| 13 | <input type="checkbox"/> | Other (please specify):<br>.....                          |
| 14 | <input type="checkbox"/> | I have no major changes in mind                           |

**I4 To what extent are you satisfied are you with your current job situation? Q65**

|   | Not at all               |                          |                          |                          | To a very high extent    |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**J Vocational education/training before your study at the VET institution S10**

**J1 Did you attend any vocational training/post-secondary school courses before your study at the VET institution? Q66**

|   |                          |                                       |
|---|--------------------------|---------------------------------------|
| 1 | <input type="checkbox"/> | Yes                                   |
| 2 | <input type="checkbox"/> | No → Please continue with question J3 |

**J2 Please specify the vocational training/post-secondary school courses. Q67**

|   |  |
|---|--|
| 1 |  |
|---|--|



**J3** **Were you employed before your study at the VET institution?** **Q68**

- 1  Yes
- 2  No

**K** **Further VET or Higher Education after study at the VET institution** **S11**

**K1** **Have you started a further or another course of studies after the study at the VET institution?** **Q70**

- 1  Yes, I have completed it successfully
- 2  Yes, I am still studying
- 3  Yes, I have stopped my further course of studies
- 4  No, I have not started a further course of studies à Please continue with question L1

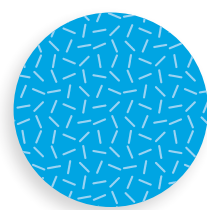
**K2** **Please specify the (major-)subjects of your further studies.** **Q71**

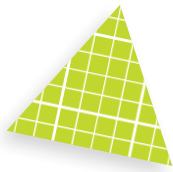
- 1
- 2
- 3

**L** **Further Vocational/Professional Training** **S12**

**L1** **Have you continued professional training after completing your VET studies?** **Q77**

- 1  Yes, I have completed it successfully
- 2  Yes, I am still studying
- 3  Yes, I have stopped my further course of studies
- 4  No, I have not started a further professional training





| <b>L2 In which topics did you receive further professional training? Multiple reply possible</b> |  | <b>Q78</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> Reinforcement of technical basic knowledge and skills                 |            |
| 2  | <input type="checkbox"/> Workplace-oriented technical knowledge                                |            |
| 3  | <input type="checkbox"/> EDP-application   |            |
| 4  | <input type="checkbox"/> Personnel management  |            |
| 5  | <input type="checkbox"/> Finance management  |            |
| 6  | <input type="checkbox"/> Contact with other persons (sales seminar/ courses on group dynamics) |            |
| 7  | <input type="checkbox"/> Preparation for management functions                                  |            |
| 8  | <input type="checkbox"/> Other (please specify):<br>.....                                      |            |

| <b>M</b> | <b>Demographic information</b> | <b>S13</b> |
|----------|--------------------------------|------------|
|----------|--------------------------------|------------|

| <b>Please provide details about yourself in order to enable us to interpret your work biography as accurately as possible.</b> |  | <b>EX3</b> |
|--|--|------------|
|--|--|------------|

| <b>M1 What is your gender?</b> |                                 | <b>Q81</b> |
|--------------------------------|---------------------------------|------------|
| 1                              | <input type="checkbox"/> Male   |            |
| 2                              | <input type="checkbox"/> Female |            |

| <b>M2 In which year were you born?</b> |   | <b>Q82</b> |
|--|---|------------|
| 1                                      | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Year of birth |            |

| <b>N</b> | <b>Migration and Regional Mobility</b> | <b>S14</b> |
|----------|--|------------|
|----------|--|------------|

| <b>N1 In which country were you born?</b> |  | <b>Q85</b> |
|---|--|------------|
| 1   | <input type="checkbox"/> XXX (according the country of the VET institutions) |            |
| 2   | <input type="checkbox"/> Other nationality (please specify):                 |            |





|           |   |            |
|-----------|---|------------|
| <b>N5</b> | <b>What is your country of residence?</b> | <b>Q89</b> |
|-----------|---|------------|

- |   |                          |   |
|---|--------------------------|---|
| 1 | <input type="checkbox"/> | XXX (according the country of the VET institutions) |
| 2 | <input type="checkbox"/> | Other country (please specify):                     |

|          |  |            |
|----------|--|------------|
| <b>O</b> | <b>Your comments and recommendations</b> | <b>S15</b> |
|----------|--|------------|

|   |            |
|---|------------|
| <b>Please share further comments and recommendations about your higher/tertiary education institution/study programme in this part.</b> | <b>EX4</b> |
|---|------------|

|           |  |            |
|-----------|--|------------|
| <b>O2</b> | <b>What did you not like about your study?</b> | <b>Q92</b> |
|-----------|--|------------|

- |   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

|           |  |            |
|-----------|--|------------|
| <b>O3</b> | <b>Which important changes would you recommend for your VET institution/study programme?</b> | <b>Q93</b> |
|-----------|--|------------|

- |   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

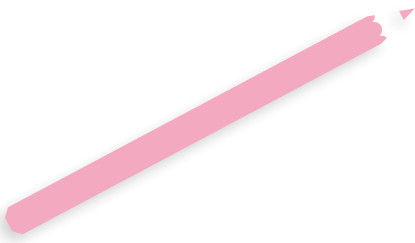
|           |  |            |
|-----------|--|------------|
| <b>O5</b> | <b>Which comments/suggestions regarding this questionnaire would you like to make?</b> | <b>Q95</b> |
|-----------|--|------------|

- |   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

**Thank you very much for completing the questionnaire!**







## ANNEX 2.

### Questionnaire modules for a TVET tracer study

#### Name of the VET Institution

#### Survey of Graduates of the year 2012

*Dear Graduates,*

*As head of the research group, I kindly request your participation in a survey of graduates who completed their studies in 2012.*

*We would like to find out what happened to you after you completed your studies. Did you find a job or are you still looking for a job, did your studies prepare you well for the workplace, and do you use the knowledge and skills you have learned during your studies?*

*The core objectives of the survey are mainly the improvement of the study programmes and, more specifically, revision of curricula.*

*Your information will be treated with strict confidentiality. The results will be published in such a way that identification of individual persons is excluded.*

*Results of this survey will be published on the web site of the (<http://XXX.YYY.XX>). On your request we will send you a printed version of the report with the main results of the survey.*

*Please return the completed questionnaire as soon as possible to the address mentioned below.*

*Thank you very much in advance for your kind support.*

Mr. XXX  
*(Project leader of the XXX graduate survey team)*

**Send the questionnaire to:**

**Name:** XXX  
**Postal address:** XXX  
**Phone:** XXX  
**Email:** XXX



## Explanatory Notes

How long does it take to fill in the questionnaire?

Most of you will need about half an hour, depending on the kind of experiences you have undergone during recent years.

We have developed a high standardised questionnaire, which mainly asks you to mark boxes which refer to relevant answers. With this approach we hope that we have made it easy for you to answer the questions.

How to answer the questions?

Please answer all questions applicable to you. In some cases, you will note that the questionnaire suggests you disregard some questions not applicable to you (e.g. → **Please continue with question B7**).

Since the questionnaire will be captured with the help of a scanner, please fill it in legibly.

Please mark the most appropriate answer like this →

Example of a 5-point-scale

In some questions we have employed answer scales from 1 to 5 (e.g. 1 = very bad to 5 = very good).

→ Mark only one box for each item (row).

→ If you would like to correct your answer, make the wrong one black and mark and underscore the right one

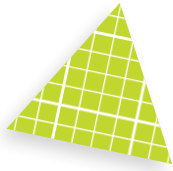
| A7 To what extent were the following reasons important for your decision to study at the VET institution? Please respond to each factor on the five-point scale. |                                     |                                     |                                     |                                     |                          |  |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--|
|  | Not at all important                |                                     |                                     | Very important                      |                          |  |
|  | 1                                   | 2                                   | 3                                   | 4                                   | 5                        |  |
| 1  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Vicinity to home of parents or other relatives |
| 2  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Availability of scholarship                    |
| 3  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Availability/quality of accommodation          |

Open answers

Sometimes we leave space for you to write an answer (.....).  
If the space for your replies is not sufficient, please include an additional sheet of paper.

Your help to improve the survey is welcome

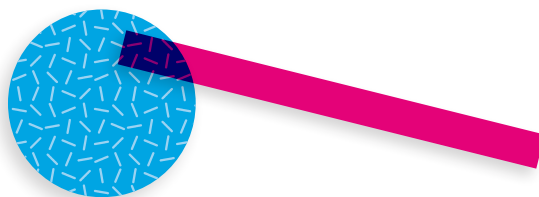
This questionnaire is used in different VET institutions with a wide range of different fields of study. We could not take into consideration every specific detail of study and work, which might be relevant for the survey. Therefore we would appreciate your comments and additional information.



*Overview of the content of the questionnaire*

|   |     |
|---|-----|
| <i>The course of studies at the VET institution</i>                                   | 172 |
| <i>Internship and work experience during course of studies at the VET institution</i> | 174 |
| <i>Evaluation of study conditions and study provisions at the VET institution</i>     | 176 |
| <i>Competencies and satisfaction with study</i>                                       | 179 |
| <i>After Graduation from the VET institution</i>                                      | 180 |
| <i>Employment and Work</i>  | 184 |
| <i>Work requirements</i>  | 188 |
| <i>Relationship between study and employment</i>                                      | 188 |
| <i>Work orientation and job satisfaction</i>  | 190 |
| <i>Vocational education/training before your study at the VET institution</i>         | 192 |
| <i>Further VET or Higher Education after study at the VET institution</i>             | 193 |
| <i>Further Vocational/Professional Training</i>                                       | 194 |
| <i>Demographic information</i>  | 195 |
| <i>Migration and Regional Mobility</i>  | 196 |
| <i>Your comments and recommendations</i>  | 197 |





|          |   |           |
|----------|---|-----------|
| <b>A</b> | <b>The course of studies at the VET institution</b> | <b>S1</b> |
|----------|---|-----------|

|  |            |
|--|------------|
| <p><i>In this section please refer in your answers only to the studies that you finished in 2012 at the VET institution.</i></p> <p><i>In case you acquired more than one degree at the VET institution, please refer to the degree (or course of studies) which is most important to you.</i></p> | <b>EX1</b> |
|--|------------|

|           |   |           |
|-----------|---|-----------|
| <b>A1</b> | <b>At which VET institution did you complete your vocational study?</b> | <b>Q1</b> |
|-----------|---|-----------|

- |   |                          |     |
|---|--------------------------|-----|
| 1 | <input type="checkbox"/> | XXX |
| 2 | <input type="checkbox"/> | YYY |
| 3 | <input type="checkbox"/> | ZZZ |

|           |   |           |
|-----------|---|-----------|
| <b>A2</b> | <b>Did you predominantly study part-time?</b> | <b>Q2</b> |
|-----------|---|-----------|

- |   |                          |     |
|---|--------------------------|-----|
| 1 | <input type="checkbox"/> | Yes |
| 2 | <input type="checkbox"/> | No  |

|           |   |           |
|-----------|---|-----------|
| <b>A3</b> | <b>When did finish your study at the VET institution?</b> | <b>Q3</b> |
|-----------|---|-----------|

- |    |                          |                |
|----|--------------------------|----------------|
| 1  | <input type="checkbox"/> | January 2012   |
| 2  | <input type="checkbox"/> | February 2012  |
| 3  | <input type="checkbox"/> | March 2012     |
| 4  | <input type="checkbox"/> | April 2012     |
| 5  | <input type="checkbox"/> | May 2012       |
| 6  | <input type="checkbox"/> | June 2012      |
| 7  | <input type="checkbox"/> | July 2012      |
| 8  | <input type="checkbox"/> | August 2012    |
| 9  | <input type="checkbox"/> | September 2012 |
| 10 | <input type="checkbox"/> | October 2012   |
| 11 | <input type="checkbox"/> | November 2012  |
| 12 | <input type="checkbox"/> | December 2012  |

|           |  |           |
|-----------|--|-----------|
| <b>A4</b> | <b>Which qualification did you achieve at the VET institution?</b> | <b>Q4</b> |
|-----------|--|-----------|

- |   |                          |                                  |
|---|--------------------------|----------------------------------|
| 1 | <input type="checkbox"/> | Certificate                      |
| 2 | <input type="checkbox"/> | Diploma                          |
| 3 | <input type="checkbox"/> | Other (please specify):<br>..... |



| A5 | What was the name of the study programme at the VET institution? | Q5 |
|----|--|----|
| 1  |  |    |

| A6 | How many months did you study at the VET institution?     | Q6 |
|----|---|----|
| 1  | <input type="checkbox"/> Less than 6 months               |    |
| 2  | <input type="checkbox"/> 6 months to less than 12 months  |    |
| 3  | <input type="checkbox"/> 12 months to less than 18 months |    |
| 4  | <input type="checkbox"/> 18 months to less than 24 months |    |
| 5  | <input type="checkbox"/> 24 months and more               |    |
| 6  | <input type="checkbox"/> Other (please specify):<br>..... |    |

| A7 | To what extent were the following reasons important for your decision to study at the VET institution? Please respond to each factor on the five-point scale. |                          |                          |                          |                          | Q7  |
|----|---|--------------------------|--------------------------|--------------------------|--------------------------|---|
| 1  | Not at all important  |                          |                          | Very important           |                          |   |
| 2  | 1   | 2                        | 3                        | 4                        | 5                        |   |
| 3  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Vicinity to home of parents or other relatives  |
| 4  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Availability of scholarship                     |
| 5  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Availability/quality of accommodation           |
| 6  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Attractiveness of town/state/region             |
| 7  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Reputation of the VET institution               |
| 8  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practice-oriented study program                 |
| 9  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Areas of specialisation provided, if applicable |
| 10 | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Advice from parents/relatives                   |

| A8 | Who was responsible for paying for your studies? Multiple answers possible | Q8 |
|----|--|----|
| 1  | <input type="checkbox"/> Parent(s)   |    |
| 2  | <input type="checkbox"/> Guardian(s) (other than biological parent(s))     |    |
| 3  | <input type="checkbox"/> Self (own savings/personal loan/own income)       |    |
| 4  | <input type="checkbox"/> Employer (private company)                        |    |
| 5  | <input type="checkbox"/> Government loan                                   |    |
| 6  | <input type="checkbox"/> Bursary   |    |
| 7  | <input type="checkbox"/> Other (please specify):<br>.....                  |    |



|  |  |           |
|--|--|-----------|
|  | <b>A9 During the course of your studies, have you ever seriously considered cancelling your study?</b> | <b>Q9</b> |
|--|--|-----------|

- |   |                          |  |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | Yes                                    |
| 2 | <input type="checkbox"/> | No à Please continue with question A11 |

|  |   |            |
|--|---|------------|
|  | <b>A10 Please specify, why you considered cancelling your study at the VET institution?</b> | <b>Q10</b> |
|--|---|------------|

- |   |
|---|
| 1 |
| 2 |
| 3 |
| 4 |

|  |  |            |
|--|--|------------|
|  | <b>A11 On average, how many hours per week did you spend <u>attending courses / classes</u> during the course of your study?</b> | <b>Q11</b> |
|--|--|------------|

- |   |                          |                   |
|---|--------------------------|-------------------|
| 1 | <input type="checkbox"/> | Up to 10 hours    |
| 2 | <input type="checkbox"/> | 11 to 19 hours    |
| 3 | <input type="checkbox"/> | 20 to 29 hours    |
| 4 | <input type="checkbox"/> | 30 to 39 hours    |
| 5 | <input type="checkbox"/> | 40 to 49 hours    |
| 6 | <input type="checkbox"/> | 50 hours and more |

|  |   |            |
|--|---|------------|
|  | <b>A12 On average, how many hours per week did you spend on study activities <u>outside of courses/classes</u> during the course of your study?</b> | <b>Q12</b> |
|--|---|------------|

- |   |                          |                   |
|---|--------------------------|-------------------|
| 1 | <input type="checkbox"/> | Up to 10 hours    |
| 2 | <input type="checkbox"/> | 11 to 19 hours    |
| 3 | <input type="checkbox"/> | 20 to 29 hours    |
| 4 | <input type="checkbox"/> | 30 to 39 hours    |
| 5 | <input type="checkbox"/> | 40 to 49 hours    |
| 6 | <input type="checkbox"/> | 50 hours and more |

|  |   |           |
|--|---|-----------|
|  | <b>B Internship and work experience during course of studies at the VET institution</b> | <b>S2</b> |
|--|---|-----------|

|  |  |            |
|--|--|------------|
|  | <b>B1 Did you do any internships during your course of studies (this does not refer to team projects, practical courses etc.)? Multiple answers possible</b> | <b>Q13</b> |
|--|--|------------|

- |   |                          |                                       |
|---|--------------------------|---------------------------------------|
| 1 | <input type="checkbox"/> | Yes                                   |
| 2 | <input type="checkbox"/> | No à Please continue with question B5 |



**B2 How many mandatory internships did you do in total during your course of studies? Q14**

- 1  One mandatory internship
- 2  Two mandatory internships
- 3  Three mandatory internships
- 4  Four and more mandatory internships

**B3 How many voluntary internships did you do in total during your course of studies? Q15**

- 1  One mandatory internship
- 2  Two mandatory internships
- 3  Three mandatory internships
- 4  Four and more mandatory internships

**B4 How many weeks did these internships last? Q16**

- 1  Up to one week
- 2  Two weeks
- 3  Three weeks
- 4  Four weeks
- 5  More than four weeks

**B5 Were you employed during your study? Please include full-time as well as part-time work; excluded are internships. Q17**

- 1  Yes
- 2  No à Please continue with question C1

**B6 For how many months were you employed during your study? Please include full-time as well as part-time work; excluded are internships. Q18**

- 1  Less than 1 month
- 2  1 to 6 months
- 3  7 to 12 months
- 4  13 to 24 months
- 5  More than 24 months



**C Evaluation of study conditions and study provisions at the VET institution S3**

**C1 To what extent were the following aspects of teaching and learning stressed in your studies? Q19**

| 1  | Not at all               |                          |                          |                          |                          | To a very high extent |  |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------|--|
|    | 1                        | 2                        | 3                        | 4                        | 5                        |                       |  |
| 2  |                          |                          |                          |                          |                          |                       |  |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Group work   |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | E-Learning   |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Lectures   |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Internships and practical training                     |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Practical knowledge                                    |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Theories and paradigms                                 |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Project and / or problem oriented learning             |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Written work   |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Oral presentations by students                         |
| 12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Self-study activities                                  |
| 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Teaching staff as main source of information           |
| 14 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Evaluation of courses by students                      |
| 15 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Choice of courses by students                          |
| 16 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Respectful communication between teachers and students |
| 17 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Enhancement of student motivation                      |
| 18 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | Enhancement of student self-learning abilities         |







| <b>C2</b> |                          | <b>How would you rate the study conditions and provisions you experienced at the VET institution?</b> |                          |                          |                          |   | <b>Q20</b> |
|-----------|--------------------------|---|--------------------------|--------------------------|--------------------------|---|------------|
| 1         | Very bad                 |   |                          |                          |                          | Very good   |            |
| 2         | 1                        | 2   | 3                        | 4                        | 5                        |   |            |
| 3         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of classroom learning   |            |
| 4         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Student recreational facilities on campus   |            |
| 5         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of learning materials (e.g. books, internet access)                                    |            |
| 6         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity for consultation with teaching staff  |            |
| 7         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teaching quality of lecturers   |            |
| 8         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teaching/grading system   |            |
| 9         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Internship programme  |            |
| 10        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Contacts with fellow students   |            |
| 11        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chances for students to have an influence on VET institution policies                         |            |
| 12        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Availability of technical equipment (e.g. lab equipment, measuring instruments, computer lab) |            |
| 13        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of technical equipment  |            |
| 14        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of teaching materials  |            |
| 15        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of buildings  |            |
| 16        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Stocking of the library   |            |
| 17        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Other (please specify):<br>.....  |            |

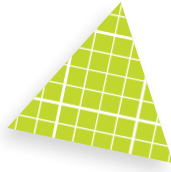
| <b>C3</b> |                          | <b>How do you rate the following advisory and guidance elements in your study course?</b> |                          |                          |                          |   | <b>Q21</b> |
|-----------|--------------------------|---|--------------------------|--------------------------|--------------------------|---|------------|
| 1         | Very bad                 |   |                          |                          |                          | Very good   |            |
| 2         | 1                        | 2   | 3                        | 4                        | 5                        |   |            |
| 3         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Professional advice and guidance provided by teaching staff |            |
| 4         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Discussion of written examinations, assignments etc.        |            |
| 5         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Individual occupational advice in your field                |            |
| 6         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Individual study advice in your field                       |            |



| <b>C4 How do you rate the following elements related to employment and work in your study course?</b> |                          |                          |                          |                          |                          | <b>Q22</b>  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|   | Very bad                 |                          |                          | Very good                |                          |   |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Preparation for work  |
| 2   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Subject matters (teaching contents) are up to date with regards to practical requirements |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practical experiences of teaching staff   |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Relationship between theory and practice  |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practice-oriented teaching contents   |
| 6   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mandatory internships   |
| 7   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Offers for acquisition of key competencies  |
| 8   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Support of employment/job search  |
| 9   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Support of internship search  |

| <b>C5 What kind of connections/contacts do you have to the VET institution? Multiple answers possible</b> |  | <b>Q23</b> |
|---|--|------------|
| 1   | <input type="checkbox"/> Newsletter                                      |            |
| 2   | <input type="checkbox"/> Graduate meetings                               |            |
| 3   | <input type="checkbox"/> Foundation/support of a graduates' association  |            |
| 4   | <input type="checkbox"/> Stimulation of professional cooperation         |            |
| 5   | <input type="checkbox"/> Help regarding professional and social problems |            |
| 6   | <input type="checkbox"/> I have no contacts to the VET institution       |            |
| 7   | <input type="checkbox"/> Other (please specify):<br>.....                |            |

| <b>C6 What kind of connections/contacts do you wish to have to the VET institution? Multiple answers possible</b> |   | <b>Q24</b> |
|---|---|------------|
| 1   | <input type="checkbox"/> Newsletter   |            |
| 2   | <input type="checkbox"/> Graduate meetings                                    |            |
| 3   | <input type="checkbox"/> Foundation/support of a graduates' association       |            |
| 4   | <input type="checkbox"/> Stimulation of professional co-operation             |            |
| 5   | <input type="checkbox"/> Help regarding professional and social problems      |            |
| 6   | <input type="checkbox"/> I don't want to have contacts to the VET institution |            |
| 7   | <input type="checkbox"/> Other (please specify):<br>.....                     |            |



**D Competencies and satisfaction with study S4**

**D1 To what extent did you acquire the following skills / competencies upon graduation? Q25**

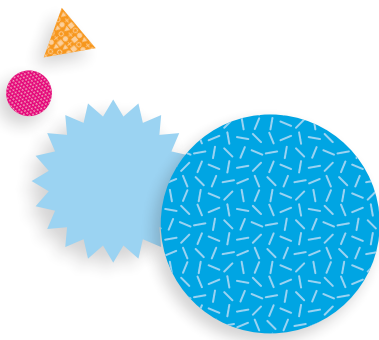
|    | Not at all               |                          |                          |                          | To a very high extent    |   |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|    | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mastery of my field/subject specific knowledge    |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to develop new ideas and solutions        |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to assert my authority                    |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to adapt to changing conditions           |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to mobilise the capacities of others      |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analytical thinking                               |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Willingness to question my and others' ideas      |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work efficiently towards a goal        |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to organise my work processes efficiently |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work productively with others          |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to perform well under pressure            |

**D2 Looking back, if you were free to choose again to what extent would you probably choose the same field of study? Q26**

|   | Not at all               |                          |                          |                          | To a very high extent    |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**D3 Looking back, if you were free to choose again to what extent would you probably choose the same VET institution? Q27**

|   | Not at all               |                          |                          |                          | To a very high extent    |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

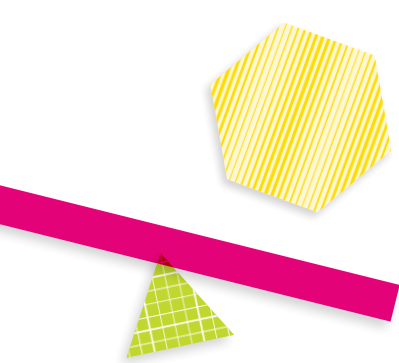


| <b>D4 In retrospect, to what extent are you satisfied with your studies in general?</b> |                          |                          |                          |                          |                          | <b>Q28</b> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
| 1   | Not at all               |                          |                          |                          | To a very high extent    |            |
| 2   | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |

**E After Graduation from the VET institution** **S5**

| <b>E1 What applied to your situation in the first six months after graduating? Multiple answers possible</b> |  | <b>Q29</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> Employment                                    |            |
| 2  | <input type="checkbox"/> Self-employed / freelance work                |            |
| 3  | <input type="checkbox"/> Occasional job (just to earn money)           |            |
| 4  | <input type="checkbox"/> Internship                                    |            |
| 5  | <input type="checkbox"/> Further academic education (higher education) |            |
| 6  | <input type="checkbox"/> Further vocational education/training         |            |
| 7  | <input type="checkbox"/> Housewife, househusband, family work          |            |
| 8  | <input type="checkbox"/> Not employed, but searching for a job         |            |
| 9  | <input type="checkbox"/> Military or civil service                     |            |
| 10   | <input type="checkbox"/> Other (please specify):<br>.....              |            |

| <b>E2 When did you start your first job after graduation?</b> |  | <b>Q30</b> |
|---|--|------------|
| 1   | <input type="checkbox"/> Before graduation                           |            |
| 2   | <input type="checkbox"/> At the time of graduation                   |            |
| 3   | <input type="checkbox"/> Less than 1 month after graduation          |            |
| 4   | <input type="checkbox"/> 1 to less than 3 months after graduation    |            |
| 5   | <input type="checkbox"/> 3 to less than 6 months after graduation    |            |
| 6   | <input type="checkbox"/> 6 to less than 9 months after graduation    |            |
| 7   | <input type="checkbox"/> 9 to less than 12 months after graduation   |            |
| 8   | <input type="checkbox"/> More than one year after graduation         |            |
| 9   | <input type="checkbox"/> I have never been employed since graduation |            |



| <b>E3</b> | <b>How did you search for the first job after graduation? Multiple answers possible</b>      | <b>Q31</b> |
|-----------|--|------------|
| 1         | <input type="checkbox"/> Replied to job ads/announcements (e.g. newspaper, internet, notice) |            |
| 2         | <input type="checkbox"/> With the help of family contacts of parents, relatives              |            |
| 3         | <input type="checkbox"/> With help of personal contacts of friends, fellow students etc.     |            |
| 4         | <input type="checkbox"/> Speculative application – independent contact to employers          |            |
| 5         | <input type="checkbox"/> Through internships during my course of studies                     |            |
| 6         | <input type="checkbox"/> Through internships after graduation                                |            |
| 7         | <input type="checkbox"/> Through (side) jobs during the study                                |            |
| 8         | <input type="checkbox"/> Through (side) jobs during after graduation                         |            |
| 9         | <input type="checkbox"/> I was contacted by an employer                                      |            |
| 10        | <input type="checkbox"/> Job fair  |            |
| 11        | <input type="checkbox"/> Through the public job centre                                       |            |
| 12        | <input type="checkbox"/> Through private job agencies  |            |
| 13        | <input type="checkbox"/> Through internet (social) networks (e.g. FACEBOOK)                  |            |
| 14        | <input type="checkbox"/> Through the career centre of the VET institution                    |            |
| 15        | <input type="checkbox"/> Through teaching staff at the VET institution                       |            |
| 16        | <input type="checkbox"/> Not applicable, I have not searched for employment                  |            |
| 17        | <input type="checkbox"/> Other (please specify):<br>.....                                    |            |

| <b>E4</b> | <b>If you did not search for employment: what were your reasons? Multiple answers possible</b> | <b>Q32</b> |
|-----------|--|------------|
| 1         | <input type="checkbox"/> I continued studying  |            |
| 2         | <input type="checkbox"/> I continued a job I had prior to studying                             |            |
| 3         | <input type="checkbox"/> I found a job without searching                                       |            |
| 4         | <input type="checkbox"/> I became self-employed / a freelancer                                 |            |
| 5         | <input type="checkbox"/> Other (please specify):<br>.....                                      |            |

*If you did not search for employment → Please continue with question XX* **F11**



| <b>E5 When did you start searching for a job?</b> |  | <b>Q33</b> |
|---|--|------------|
| 1   | <input type="checkbox"/> Prior to graduation           |            |
| 2   | <input type="checkbox"/> Around the time of graduation |            |
| 3   | <input type="checkbox"/> After graduation              |            |

| <b>E6 How long have you searched for your first job? Include also job search period before graduation.</b> |   | <b>Q34</b> |
|--|---|------------|
| 1  | <input type="checkbox"/> Less than 1 month        |            |
| 2  | <input type="checkbox"/> 1 to less than 3 months  |            |
| 3  | <input type="checkbox"/> 3 to less than 6 months  |            |
| 4  | <input type="checkbox"/> 6 to less than 9 months  |            |
| 5  | <input type="checkbox"/> 9 to less than 12 months |            |
| 6  | <input type="checkbox"/> More than one year       |            |

| <b>E7 What was the most successful method for finding your first job? Choose only one answer</b> |  | <b>Q35</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> Replied to job ads/announcements (e.g. newspaper, internet, notice) |            |
| 2  | <input type="checkbox"/> With the help of family contacts of parents, relatives              |            |
| 3  | <input type="checkbox"/> With help of personal contacts of friends, fellow students etc.     |            |
| 4  | <input type="checkbox"/> Speculative application – independent contact to employers          |            |
| 5  | <input type="checkbox"/> Through internships during my course of studies                     |            |
| 6  | <input type="checkbox"/> Through internships after graduation                                |            |
| 7  | <input type="checkbox"/> Through (side) jobs during the study                                |            |
| 8  | <input type="checkbox"/> Through (side) jobs during after graduation                         |            |
| 9  | <input type="checkbox"/> I was contacted by an employer                                      |            |
| 10   | <input type="checkbox"/> Job fair  |            |
| 11   | <input type="checkbox"/> Through the public job centre                                       |            |
| 12   | <input type="checkbox"/> Through private job agencies  |            |
| 13   | <input type="checkbox"/> Through internet (social) networks (e.g. FACEBOOK)                  |            |
| 14   | <input type="checkbox"/> Through the career centre of the VET institution                    |            |
| 15   | <input type="checkbox"/> Through teaching staff at the VET institution                       |            |
| 16   | <input type="checkbox"/> Not applicable, I did not find a job until now                      |            |
| 17   | <input type="checkbox"/> Other (please specify):<br>.....                                    |            |



**E8** How many employers have you approached for the first employment after completion of your study programme? **Q36**

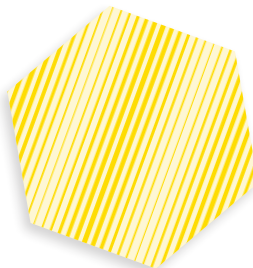
- 1  I have not approached an employer à Please continue with question F1
- 2  1 employer
- 3  2 to less than 5 employers
- 4  5 to less than 10 employers
- 5  10 to less than 20 employers
- 6  More than 20 employers

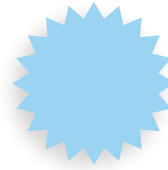
**E9** From how many employers did you receive acknowledgements? **Q37**

- 1  From no employer
- 2  From 1 employer
- 3  From 2 to less than 5 employers
- 4  From 5 to less than 10 employers
- 5  From 10 to less than 20 employers
- 6  From more than 20 employers

**E10** From how many employers did you receive calls for interviews? **Q38**

- 1  From no employer
- 2  From 1 employer
- 3  From 2 to less than 5 employers
- 4  From 5 to less than 10 employers
- 5  From 10 to less than 20 employers
- 6  From more than 20 employers





|          |                            |           |
|----------|----------------------------|-----------|
| <b>F</b> | <b>Employment and Work</b> | <b>S6</b> |
|----------|----------------------------|-----------|

|           |  |            |
|-----------|--|------------|
| <b>F1</b> | <b>What applies to your current situation? Multiple answers possible</b> | <b>Q39</b> |
|-----------|--|------------|

- |    |                          |   |
|----|--------------------------|---|
| 1  | <input type="checkbox"/> | Regular job                                   |
| 2  | <input type="checkbox"/> | Self-employed / freelance work                |
| 3  | <input type="checkbox"/> | Occasional job (just to earn money)           |
| 4  | <input type="checkbox"/> | Internship                                    |
| 5  | <input type="checkbox"/> | Further academic education (higher education) |
| 6  | <input type="checkbox"/> | Further vocational training                   |
| 7  | <input type="checkbox"/> | Housewife, househusband, family care          |
| 8  | <input type="checkbox"/> | Not employed, but searching for a job         |
| 9  | <input type="checkbox"/> | Military or civil service                     |
| 10 | <input type="checkbox"/> | Other (please specify):<br>.....              |

|           |  |            |
|-----------|--|------------|
| <b>F2</b> | <b>Since completing your study programme at the VET institution which of the following applied to you? Multiple answers possible</b> | <b>Q40</b> |
|-----------|--|------------|

- |   |                          |  |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | I considered working abroad                            |
| 2 | <input type="checkbox"/> | I sought employment abroad                             |
| 3 | <input type="checkbox"/> | I received an offer to work abroad                     |
| 4 | <input type="checkbox"/> | I had regular employment abroad                        |
| 5 | <input type="checkbox"/> | I have been sent abroad by employer on work assignment |
| 6 | <input type="checkbox"/> | None of the above                                      |

|           |   |            |
|-----------|---|------------|
| <b>F3</b> | <b>How many jobs (including your current one) have you had altogether since graduation?</b> | <b>Q41</b> |
|-----------|---|------------|

- |   |                          |  |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | No job, I have never been employed since graduation à Filter |
| 2 | <input type="checkbox"/> | One job  |
| 3 | <input type="checkbox"/> | Two jobs   |
| 4 | <input type="checkbox"/> | Three jobs   |
| 5 | <input type="checkbox"/> | More than three jobs   |

|   |            |
|---|------------|
| <i>If you are currently unemployed → Please continue with question H6</i> | <b>F12</b> |
|---|------------|





**F4 How many hours do you work per week? Q42**

- 1  Less than 20 hours per week
- 2  21 to 30 hours
- 3  31 to 40 hours
- 4  41 to 50 hours
- 5  More than 50 hours

**F5 Are you permanently employed? Q43**

- 1  Yes
- 2  No
- 3  Not applicable, I am self-employed

**F6 How long did it take you to find your current job after completing your studies in 2011? Q44**

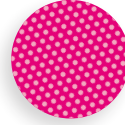
- 1  Less than 1 month
- 2  1 to less than 3 months
- 3  3 to less than 6 months
- 4  6 to less than 9 months
- 5  9 to less than 12 months
- 6  More than one year

**F7 How long have you been working in your current job? Q45**

- 1  Less than 1 month
- 2  1 to less than 3 months
- 3  3 to less than 6 months
- 4  6 to less than 9 months
- 5  9 to less than 12 months
- 6  More than one year

**F8 In which region are you employed? Q46**

- 1



|           |   |            |
|-----------|---|------------|
| <b>F9</b> | <b>What type of employer do you work for?</b> | <b>Q47</b> |
|-----------|---|------------|

- |   |  |
|---|--|
| 1 | <input type="checkbox"/> Public/government                   |
| 2 | <input type="checkbox"/> Parastatal                          |
| 3 | <input type="checkbox"/> Private                             |
| 4 | <input type="checkbox"/> Self-employed                       |
| 5 | <input type="checkbox"/> Non-governmental organisation (NGO) |
| 6 | <input type="checkbox"/> International and diplomatic        |
| 7 | <input type="checkbox"/> Other (please specify):<br>.....    |

|            |  |            |
|------------|--|------------|
| <b>F10</b> | <b>In which economic sector are you currently employed (e.g. fisheries, agriculture, secondary education)?</b> | <b>Q48</b> |
|------------|--|------------|

- |   |  |
|---|--|
| 1 |  |
|---|--|

|            |   |            |
|------------|---|------------|
| <b>F11</b> | <b>What is your occupation/job title? (e.g. primary school teacher)</b> | <b>Q49</b> |
|------------|---|------------|

- |   |  |
|---|--|
| 1 |  |
|---|--|

|            |  |            |
|------------|--|------------|
| <b>F12</b> | <b>Outline the 3 main duties/work tasks.</b> | <b>Q50</b> |
|------------|--|------------|

- |   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

|            |   |            |
|------------|---|------------|
| <b>F13</b> | <b>What is your current gross monthly income?</b> | <b>Q51</b> |
|------------|---|------------|

- |   |   |
|---|---|
| 1 | <input type="checkbox"/> Less than \$ 100 |
| 2 | <input type="checkbox"/> \$ 100 - 150     |
| 3 | <input type="checkbox"/> \$ 151 - 200     |
| 4 | <input type="checkbox"/> \$ 201 - 250     |
| 5 | <input type="checkbox"/> \$ 251 - 300     |
| 6 | <input type="checkbox"/> \$ 300 - 350     |
| 7 | <input type="checkbox"/> \$ 351 - 401     |
| 8 | <input type="checkbox"/> \$ 401 - 450     |
| 9 | <input type="checkbox"/> More than \$ 450 |



| <b>F14</b> |                          | <b>What kind of fringe/other benefit(s) do you receive? Multiple answers possible</b> | <b>Q52</b> |
|------------|--------------------------|---|------------|
| 1          | <input type="checkbox"/> | Housing (subsidy, rent allowance)   |            |
| 2          | <input type="checkbox"/> | Transportation (car/transport allowance)  |            |
| 3          | <input type="checkbox"/> | Health (medical aid, insurances)  |            |
| 4          | <input type="checkbox"/> | Education and training (staff development, family study rebate)                       |            |
| 5          | <input type="checkbox"/> | Retirement (pension, gratuity)  |            |
| 6          | <input type="checkbox"/> | None  |            |
| 7          | <input type="checkbox"/> | Other (please specify):<br>.....  |            |

| <b>F15</b> |                          | <b>How many employees work in your company / organisation in total? Please estimate the number.</b> | <b>Q53</b> |
|------------|--------------------------|---|------------|
| 1          | <input type="checkbox"/> | 1 to 9 employees  |            |
| 2          | <input type="checkbox"/> | 10 to 49 employees  |            |
| 3          | <input type="checkbox"/> | 50 to 99 employees  |            |
| 4          | <input type="checkbox"/> | 100 to 249 employees  |            |
| 5          | <input type="checkbox"/> | 250 to 999 employees  |            |
| 6          | <input type="checkbox"/> | 1000 or more employees  |            |

| <b>F16</b> |                          | <b>What is the geographical scope of your company/firm/organisation?</b> | <b>Q54</b> |
|------------|--------------------------|--|------------|
| 1          | <input type="checkbox"/> | Local scope  |            |
| 2          | <input type="checkbox"/> | Regional scope   |            |
| 3          | <input type="checkbox"/> | National scope   |            |
| 4          | <input type="checkbox"/> | International scope  |            |





**G Work requirements S7**

**G1 To what extent are the following skills / competencies required in your current employment? Q55**

|    | To a very high extent    |                          |                          |                          |                          |   |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|    | Not at all               |                          |                          |                          |                          |   |
|    | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mastery of my field/subject specific knowledge    |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to develop new ideas and solutions        |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to assert my authority                    |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to adapt to changing conditions           |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to mobilise the capacities of others      |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analytical thinking                               |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Willingness to question my and others' ideas      |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work efficiently towards a goal        |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to organise my work processes efficiently |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to work productively with others          |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Ability to perform well under pressure            |

**H Relationship between study and employment S8**

**H1 To what extent are the knowledge and skills you acquired during study utilised in your current job? Q56**

| 1 | To a very high extent    |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | Not at all               |                          |                          |                          |                          |
| 2 | 1                        | 2                        | 3                        | 4                        | 5                        |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**H2 In your opinion, what field of study is most appropriate for your current job? Q57**

|   |                          |                              |
|---|--------------------------|------------------------------|
| 1 | <input type="checkbox"/> | Exclusively own field        |
| 2 | <input type="checkbox"/> | Own or a related field       |
| 3 | <input type="checkbox"/> | A completely different field |
| 4 | <input type="checkbox"/> | No particular field          |



| <b>H3 In your opinion, which qualification/degree level best matches your current job?</b> |  | <b>Q58</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> A higher degree/ qualification    |            |
| 2  | <input type="checkbox"/> My degree/qualification           |            |
| 3  | <input type="checkbox"/> A lower degree/qualification      |            |
| 4  | <input type="checkbox"/> No degree/qualification necessary |            |

| <b>H4 To what extent is your professional position appropriate to your course of study?</b> |                          |                          |                          |                          |                          | <b>Q59</b> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------|
| 1   | Not at all               |                          |                          |                          | To a very high extent    |            |
| 2   | 1                        | 2                        | 3                        | 4                        | 5                        |            |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |            |

| <b>H5 If your job is not closely related to your course of study, why did you choose this job?</b> |   | <b>Q60</b> |
|--|---|------------|
| 1  | <input type="checkbox"/> Not applicable, my job is closely related to my course of study                                      |            |
| 2  | <input type="checkbox"/> My current job is only a temporary stepping stone, I am still searching for professional orientation |            |
| 3  | <input type="checkbox"/> I have not found an appropriate job (yet)  |            |
| 4  | <input type="checkbox"/> I receive a higher salary in my current job  |            |
| 5  | <input type="checkbox"/> My current job offers more security  |            |
| 6  | <input type="checkbox"/> My interests have changed  |            |
| 7  | <input type="checkbox"/> My current job allows a flexible time schedule   |            |
| 8  | <input type="checkbox"/> My current job allows me to work in a favoured geographical place                                    |            |
| 9  | <input type="checkbox"/> My current job allows me to take into consideration the interests of my family/children              |            |
| 10   | <input type="checkbox"/> Other (please specify):<br>.....   |            |

| <b>H6 Altogether: How do you rate the usefulness of your studies?</b> |                          |                          |                          |                          |                          | <b>Q61</b>   |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| 1   | Not at all useful        |                          |                          |                          | Very useful              |  |
| 2   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for finding an adequate job after finishing your studies?      |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for fulfilling your present professional tasks, if applicable? |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for your future professional development/career?               |
| 6   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for the development of your personality?                       |
| 7   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for the economic development of your country?                  |

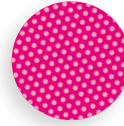


**I Work orientation and job satisfaction S9**

**I1 How important are the following occupational aspects for you? Q62**

| 1  | Not at all important     |                          | Very important           |                          |                          |  |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| 2  | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Interesting work tasks   |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Work autonomy  |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear and regulated work tasks   |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities for applying acquired competencies                         |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Job security   |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Social status and recognition  |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to realise own ideas                                       |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good work atmosphere   |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities of further professional advancement                        |
| 12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | High salary  |
| 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibility for providing social influence                               |
| 14 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | To have a challenging job  |
| 15 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good career advancement prospects  |
| 16 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assumption of coordination and management tasks                          |
| 17 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to do something useful for the general public              |
| 18 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good conditions for managing both work-related and family-related issues |
| 19 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sufficient time for leisure activities                                   |

*If you are not employed → Please continue with question I3* **F13**



| I2 To what extent do the following aspects apply to your current job situation? |                          |                          |                          |                          |                          | Q63  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| 1   | Not at all               |                          |                          |                          | To a very high extent    |  |
| 2   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Interesting work tasks   |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Work autonomy  |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear and regulated work tasks   |
| 6   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities for applying acquired competencies                         |
| 7   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Job security   |
| 8   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Social status and recognition  |
| 9   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to realise own ideas                                       |
| 10  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good work atmosphere   |
| 11  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities of further professional advancement                        |
| 12  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | High salary  |
| 13  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibility for providing social influence                               |
| 14  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | To have a challenging job  |
| 15  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good career advancement prospects  |
| 16  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assumption of coordination and management tasks                          |
| 17  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities to do something useful for the general public              |
| 18  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good conditions for managing both work-related and family-related issues |
| 19  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sufficient time for leisure activities                                   |



**I3 What changes in employment and further education/training do you plan to achieve within the next three years? Multiple answers possible Q64**

- 1  to change my employer
- 2  to obtain higher income
- 3  to change my area of work assignment
- 4  to restart full-time study
- 5  to study part-time
- 6  to start my own business
- 7  to get employed
- 8  to discontinue employment
- 9  to achieve more secure employment
- 10  to achieve better use of my knowledge
- 11  to obtain a better chance of pursuing continuous learning
- 12  to take over a job more closely linked to my study
- 13  Other (please specify):  
.....
- 14  I have no major changes in mind

**I4 To what extent are you satisfied are you with your current job situation? Q65**

|   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | Not at all               |                          |                          |                          | To a very high extent    |
| 2 | 1                        | 2                        | 3                        | 4                        | 5                        |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**J Vocational education/training before your study at the VET institution S10**

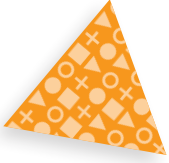
**J1 Did you attend any vocational training/post-secondary school courses before your study at the VET institution? Q66**

- 1  Yes
- 2  No à Please continue with question J3

**J2 Please specify the vocational training/post-secondary school courses. Q67**

1





**J3 Were you employed before your study at the VET institution? Q68**

- 1  Yes
- 2  No → Please continue with question K1

**J4 How long were you employed before your study at the VET institution? Q69**

- 1  Less than 1 year
- 2  1 year to 2 years
- 3  2 years to 3 years
- 4  3 years to 4 years
- 5  More than 4 years

**K Further VET or Higher Education after study at the VET institution S11**

**K1 Have you started a further or another course of studies after the study at the VET institution? Q70**

- 1  Yes, I have completed it successfully
- 2  Yes, I am still studying
- 3  Yes, I have stopped my further course of studies
- 4  No, I have not started a further course of studies → Please continue with question L1

**K2 Please specify the (major-)subjects of your further studies. Q71**

- 1 .....
- 2 .....
- 3 .....

**K3 Please specify the name of the institution(s) and country of your further studies. Q72**

- 1 .....
- 2 .....
- 3 .....



| <b>K4 Please specify the kind of (expected) degree (certificate, diploma, bachelor, master) of your further studies.</b> |       | <b>Q73</b> |
|--|-------|------------|
| 1  | ..... |            |
| 2  | ..... |            |
| 3  | ..... |            |

| <b>K5 When did you start your course of further studies?</b> |  | <b>Q74</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> <input type="checkbox"/> Month of enrolment in further studies  |            |
| 2  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Year of enrolment in further studies |            |

| <b>K6 When did you/will you finish your course of further studies?</b> |   | <b>Q75</b> |
|--|---|------------|
| 1  | <input type="checkbox"/> <input type="checkbox"/> Month of graduation from further studies  |            |
| 2  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Year of graduation from further studies |            |

| <b>K7 To what extent do the following reasons for further studies apply to you?</b> |                          |                          |                          |                          |                          | <b>Q76</b>  |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|--|
|   | Not at all               |                          |                          |                          |                          | To a very high extent                                       |  |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |   |  |
| 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wish to achieve a higher academic or professional degree    |  |
| 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Improve chances of finding a job                            |  |
| 5   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Personal interest in particular subject area                |  |
| 6   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Demanded by my employer                                     |  |
| 7   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wish to improve my promotion prospects                      |  |
| 8   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The training is important for the development of my country |  |

| <b>L Further Vocational/Professional Training</b> | <b>S12</b> |
|---|------------|
|---|------------|

| <b>Please also take into account all forms of further vocational education - not only participation in events/courses.</b> | <b>EX2</b> |
|--|------------|
|--|------------|

| <b>L1 Have you continued professional training after completing your VET studies?</b> |   | <b>Q77</b> |
|---|---|------------|
| 1   | <input type="checkbox"/> Yes, I have completed it successfully                |            |
| 2   | <input type="checkbox"/> Yes, I am still studying                             |            |
| 3   | <input type="checkbox"/> Yes, I have stopped my further course of studies     |            |
| 4   | <input type="checkbox"/> No, I have not started further professional training |            |



| <b>L2 In which topics did you receive further professional training? Multiple reply possible</b> |  | <b>Q78</b> |
|--|--|------------|
| 1  | <input type="checkbox"/> Reinforcement of technical basic knowledge and skills                 |            |
| 2  | <input type="checkbox"/> Workplace-oriented technical knowledge                                |            |
| 3  | <input type="checkbox"/> EDP-application   |            |
| 4  | <input type="checkbox"/> Personnel management  |            |
| 5  | <input type="checkbox"/> Finance management  |            |
| 6  | <input type="checkbox"/> Contact with other persons (sales seminar/ courses on group dynamics) |            |
| 7  | <input type="checkbox"/> Preparation for management functions                                  |            |
| 8  | <input type="checkbox"/> Other (please specify):<br>.....                                      |            |

| <b>L3 Please specify the (major-)subjects/name of the course(s) of your further studies.</b> |  | <b>Q79</b> |
|--|--|------------|
| 1  |  |            |
| 2  |  |            |
| 3  |  |            |

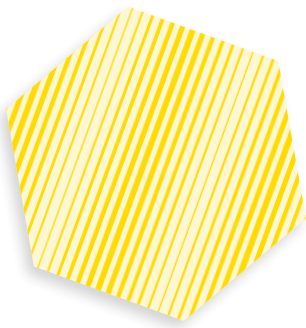
| <b>L4 In which topics would you like to receive further professional training if you had the opportunity to participate?</b> |  | <b>Q80</b> |
|--|--|------------|
| 1  |  |            |
| 2  |  |            |
| 3  |  |            |

| <b>M Demographic information</b> | <b>S13</b> |
|----------------------------------|------------|
|----------------------------------|------------|

| <b>Please provide details about yourself in order to enable us to interpret your work biography as accurately as possible.</b> |  | <b>EX3</b> |
|--|--|------------|
|--|--|------------|

| <b>M1 What is your gender?</b> |                                 | <b>Q81</b> |
|--------------------------------|---------------------------------|------------|
| 1                              | <input type="checkbox"/> Male   |            |
| 2                              | <input type="checkbox"/> Female |            |

| <b>M2 In which year were you born?</b> |   | <b>Q82</b> |
|--|---|------------|
| 2                                      | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Year of birth |            |



**M3 What is the highest level of education of your father? Q83**

- 1  Without education
- 2  Incomplete primary school
- 3  Complete primary school
- 4  Junior secondary
- 5  Senior secondary
- 6  Diploma
- 7  Higher education degree (bachelor, master, doctorate)
- 8  Don't know
- 9  Other (please specify):  
.....

**M4 What was the highest level of education of your mother? Q84**

- 1  Without education
- 2  Incomplete primary school
- 3  Complete primary school
- 4  Junior secondary
- 5  Senior secondary
- 6  Diploma
- 7  Higher education degree (bachelor, master, doctorate)
- 8  Don't know
- 9  Other (please specify):  
.....

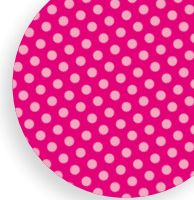
**N Migration and Regional Mobility S14**

**N1 In which country are you born? Q85**

- 1  XXX (according the country of the VET institutions)
- 2  Other nationality (please specify):

**N2 In which country did you (mainly) attend secondary education? Q86**

- 1  XXX (according the country of the VET institutions)
- 2  Other nationality (please specify):



**N3 Was your secondary school located in an urban or rural area? Q87**

- 1  Urban
- 2  Rural

**N4 What is your nationality? Q88**

- 1  XXX (according the country of the VET institutions)
- 2  Other nationality (please specify):

**N5 What is your country of residence? Q89**

- 1  XXX (according the country of the VET institutions)
- 2  Other country (please specify):

**N6 In which region of (the country of the VET institutions) are you living? Q90**

- 1  Region 1
- 2  Region 2
- 3  Region 3
- 4  Region 4
- 5  Region 5
- 6  Region 6
- 7  Other region (please specify):

**O Your comments and recommendations S15**

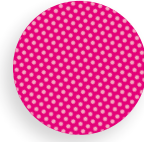
**Please share further comments and recommendations about your higher/tertiary education institution/study programme in this part. EX4**

**O1 What did you like about your study? Q91**

- 1
- 2
- 3

**O2 What did you not like about your study? Q92**

- 1
- 2
- 3



**Q93** **O3** What important changes would you recommend for your VET institution/study programme?

|   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

**Q94** **O4** What comments/suggestions regarding this survey would you like to make?

|   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

**Q95** **O5** What comments/suggestions regarding this questionnaire would you like to make?

|   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

**Q96** **O6** How many minutes did you need to fill in this questionnaire?

1  Minutes needed to fill in the questionnaire

**Q97** **O7** How do you rate the following aspects of this questionnaire?

|   | Very bad                 |                          | Very good                |                          |                          |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Length of the questionnaire  |
| 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clearness of the questions   |
| 5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Understandable phrasing  |
| 6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Relevance of the questions to improving the VET programme                                |
| 7 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Relevance of the questions to information about the labour market situation of graduates |

**Thank you very much for completing the questionnaire!**



## ANNEX 3.

### Tables report with questionnaire and codebook

#### Content of the tables report

|   |     |
|---|-----|
| A. EDUCATIONAL BACKGROUND PRIOR TO STUDY  | 201 |
| B. COURSE OF STUDY  | 201 |
| Table 1 Major field of study, by country, by country (%)  | 201 |
| Table 2 Time spent abroad during study period, by country (%)   | 201 |
| Table 3 Emphasis on modes of teaching and learning, by country (arithmetic mean)                        | 202 |
| Table 4 Emphasis on modes of teaching and learning, by country (%; responses 1 and 2)                   | 202 |
| Table 5 Emphasis on modes of teaching and learning, by country (%; responses 4 and 5)                   | 203 |
| Table 6 Rating of study provisions and conditions, by country (arithmetic mean)                         | 203 |
| Table 7 Rating of study provisions and conditions, by country (%; responses 1 and 2)                    | 204 |
| Table 8 Rating of study provisions and conditions, by country (%; responses 4 and 5)                    | 205 |
| C. JOB SEARCH AND SEQUENCE OF PROFESSIONAL ACTIVITIES   | 205 |
| Table 9 Job search since graduation, by country (%; multiple responses)                                 | 205 |
| Table 10 Methods of job search, by country (%; multiple responses)                                      | 206 |
| Table 11 Most important method for getting first job after graduation, by country (%)                   | 206 |
| Table 12 Number of employers contacted before first job after graduation, by country (means)            | 207 |
| Table 13 Duration of job search for first job after graduation in 1994/95, by country (means)           | 207 |
| D. EMPLOYMENT AND WORK  | 207 |
| Table 14 Kind of major activity four years after graduation, by country (%)                             | 207 |
| Table 15 Full-time employment, by country (%)   | 208 |
| Table 16 Type of contract, by country (%)   | 208 |
| Table 17 Level of Occupation, by Country (%)  | 208 |
| Table 18 Current professional situation, by country (%; multiple responses)                             | 209 |
| Table 19 Kind of current employer/institution, by country (%)   | 209 |
| Table 20 Economic sector of current work, by country (%)  | 209 |
| Table 21 Size of company, by country (means)  | 210 |
| Table 22 Annual gross income, by country (including extra payments and second jobs), by country (means) | 210 |
| E. ACQUIRED COMPETENCIES AND WORK REQUIREMENTS  | 211 |
| Table 23 Competencies at time of graduation, by country (arithmetic mean)                               | 211 |
| Table 24 Competencies at time of graduation, by country (%; responses 1 and 2)                          | 212 |
| Table 25 Competencies at time of graduation, by country (%; responses 4 and 5)                          | 213 |
| Table 26 Work requirements, by country (arithmetic mean)  | 214 |
| Table 27 Work requirements, by country (%; responses 1 and 2)   | 215 |
| Table 28 Work requirements, by country (%; responses 4 and 5)   | 216 |
| Table 29 Utility of study, by country (arithmetic mean)   | 217 |
| Table 30 Utility of study, by country (%; responses 1 and 2)  | 217 |
| Table 31 Utility of study, by country (%; responses 4 and 5)  | 217 |



|   |     |
|---|-----|
| F. RELATIONSHIP BETWEEN HIGHER EDUCATION AND WORK   | 218 |
| Table 32 Use of knowledge and skills acquired in the course of study, by country (%; arithmetic mean)   | 218 |
| Table 33 Relationship between field of study and area of work, by country (%; multiple responses)       | 218 |
| Table 34 Appropriateness of level of education for employment and work, by country (%; arithmetic mean) | 219 |
| Table 35 Most appropriate level of course of study/degree, by country (%)                               | 219 |
| Table 36 Reasons for taking a job not closely linked to study, by country (%; multiple responses)       | 220 |
| G. WORK ORIENTATIONS AND JOB SATISFACTION   | 220 |
| Table 37 General satisfaction with current work, by country (%; arithmetic mean)                        | 220 |
| Table 38 Work orientations, by country (arithmetic mean)  | 221 |
| Table 39 Work orientations, by country (%; responses 1 and 2)   | 222 |
| Table 40 Work orientations, by country (%; responses 4 and 5)   | 223 |
| Table 41 Professional situation, by country (arithmetic mean)   | 224 |
| Table 42 Professional situation, by country (%; responses 1 and 2)                                      | 225 |
| Table 43 Professional situation, by country (%; responses 4 and 5)                                      | 226 |
| H. SOCIO-BIOGRAPHIC DATA  | 226 |
| Table 44 Gender, by country (%)   | 226 |
| Table 45 Year of birth, by country (means)  | 227 |
| Table 46 Kind of residence immediately prior to graduation, by country (%; multiple responses)          | 227 |
| Table 47 Kind of current residence, by country (%; multiple responses)                                  | 227 |
| I. RETROSPECTIVE ASSESSMENT OF STUDY  | 228 |
| Table 48 Utility of study viewed retrospectively, by country (arithmetic mean)                          | 228 |
| Table 49 Utility of study viewed retrospectively, by country (%; responses 1 and 2)                     | 228 |
| Table 50 Utility of study viewed retrospectively, by country (%; responses 4 and 5)                     | 228 |
| Table 51 Satisfaction with course of study, by country (arithmetic mean)                                | 228 |
| Table 52 Satisfaction with course of study, by country (%; responses 1 and 2)                           | 229 |
| Table 53 Satisfaction with course of study, by country (%; responses 4 and 5)                           | 229 |
| APPENDIX 1: THE TRACER STUDY 2000 QUESTIONNAIRE   | 230 |
| APPENDIX 2: DATA DOCUMENTATION (CODEBOOK) OF THE TRACER STUDY 2000                                      | 244 |





## A. Educational background prior to study

## B. Course of study

**Table 1** Major field of study, by country, by country (%)

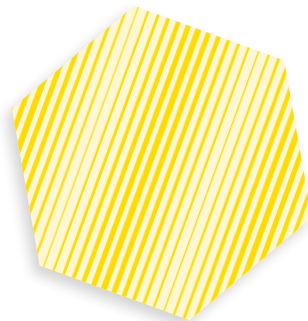
|                       | Italy | Germany | UK  | Japan | #Total |
|-----------------------|-------|---------|-----|-------|--------|
| <b>Field of study</b> |       |         |     |       |        |
| Humanities            | 40    | 19      | 44  | 48    | 37     |
| Sciences              | 17    | 19      | 25  | 12    | 18     |
| Engineering           | 43    | 63      | 31  | 40    | 45     |
| Total                 | 100   | 100     | 100 | 100   | 100    |
| Count                 | 309   | 392     | 316 | 330   | 1 347  |

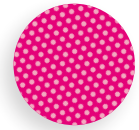
Question B1: What has been your (major) field of study?

**Table 2** Time spent abroad during study period, by country (%)

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| <b>Time spent abroad during study period</b> |       |         |     |       |        |
| Yes  | 23    | 23      | 22  | 18    | 22     |
| No   | 70    | 76      | 74  | 81    | 75     |
| 9  | 7     | 1       | 3   | 1     | 3      |
| Total  | 100   | 100     | 100 | 100   | 100    |
| Count  | 309   | 392     | 316 | 330   | 1 347  |

Question B2: Did you spend any time abroad during the period of your study (in order to work or to study)?





**Table 3 Emphasis on modes of teaching and learning, by country (arithmetic mean)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Facts and instrumental knowledge                            | 2.6   | 3.9     | 4.0 | 3.4   | 3.5    |
| Theories, concepts or paradigms                             | 3.9   | 3.7     | 4.1 | 3.8   | 3.8    |
| Attitudes and socio-communicative skills                    | 2.5   | 2.2     | 2.9 | 2.8   | 2.6    |
| Independent learning  | 3.9   | 3.8     | 3.9 | 3.4   | 3.7    |
| Regular class attendance                                    | 3.6   | 3.1     | 3.6 | 3.8   | 3.5    |
| Teacher as the main source of information and understanding | 3.3   | 3.0     | 3.0 | 2.8   | 3.0    |
| Freedom to choose courses and areas of specialisation       | 3.3   | 3.3     | 3.5 | 3.5   | 3.4    |
| Project and problem-based learning                          | 2.5   | 2.7     | 3.5 | 3.1   | 2.9    |
| Direct acquisition of work experience                       | 1.6   | 2.1     | 2.0 | 2.0   | 1.9    |
| Out-of-class communication between students and staff       | 2.1   | 2.2     | 2.8 | 2.4   | 2.4    |
| Writing a thesis  | 5.0   | 3.8     | 4.1 | 4.2   | 4.2    |
| Detailed regular assessment of academic progress            | 2.0   | 2.6     | 3.5 | 3.1   | 2.8    |
| Count   | 309   | 391     | 314 | 329   | 1 343  |

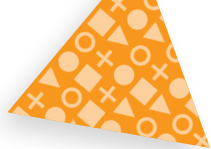
Question B8: If you look back to your course of study that you graduated from in 1994 or 1995<sup>11</sup>: to what extent were the following modes of teaching and learning emphasised by your institution of higher education and its teachers? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 4 Emphasis on modes of teaching and learning, by country (%; responses 1 and 2)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Facts and instrumental knowledge                            | 52    | 6       | 7   | 20    | 20     |
| Theories, concepts or paradigms                             | 11    | 13      | 4   | 8     | 9      |
| Attitudes and socio-communicative skills                    | 52    | 67      | 38  | 48    | 52     |
| Independent learning  | 10    | 12      | 6   | 20    | 12     |
| Regular class attendance                                    | 17    | 29      | 16  | 11    | 19     |
| Teacher as the main source of information and understanding | 20    | 32      | 32  | 39    | 31     |
| Freedom to choose courses and areas of specialisation       | 23    | 25      | 21  | 15    | 21     |
| Project and problem-based learning                          | 57    | 48      | 21  | 30    | 39     |
| Direct acquisition of work experience                       | 84    | 70      | 74  | 74    | 75     |
| Out-of-class communication between students and staff       | 66    | 64      | 45  | 55    | 58     |
| Writing a thesis  | 0     | 11      | 9   | 6     | 7      |
| Detailed regular assessment of academic progress            | 72    | 51      | 19  | 28    | 43     |
| Count   | 309   | 391     | 314 | 329   | 1 343  |

Question B8: If you look back to your course of study that you graduated from in 1994 or 1995: to what extent were the following modes of teaching and learning emphasised by your institution of higher education and its teachers? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

<sup>11</sup> Concerns Tracer Study of graduates 2000



**Table 5 Emphasis on modes of teaching and learning, by country (%; responses 4 and 5)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Facts and instrumental knowledge                            | 21    | 70      | 70  | 50    | 54     |
| Theories, concepts or paradigms                             | 69    | 61      | 77  | 65    | 68     |
| Attitudes and socio-communicative skills                    | 21    | 10      | 32  | 27    | 22     |
| Independent learning  | 68    | 65      | 69  | 43    | 61     |
| Regular class attendance                                    | 54    | 38      | 59  | 66    | 53     |
| Teacher as the main source of information and understanding | 40    | 29      | 28  | 23    | 30     |
| Freedom to choose courses and areas of specialisation       | 47    | 46      | 55  | 56    | 51     |
| Project and problem-based learning                          | 22    | 23      | 53  | 33    | 32     |
| Direct acquisition of work experience                       | 9     | 11      | 15  | 9     | 11     |
| Out-of-class communication between students and staff       | 14    | 16      | 27  | 15    | 18     |
| Writing a thesis  | 100   | 69      | 79  | 81    | 81     |
| Detailed regular assessment of academic progress            | 12    | 24      | 52  | 37    | 31     |
| Count   | 309   | 391     | 314 | 329   | 1 343  |

Question B8: If you look back to your course of study that you graduated from in 1994 or 1995: to what extent were the following modes of teaching and learning emphasised by your institution of higher education and its teachers? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 6 Rating of study provisions and conditions, by country (arithmetic mean)**

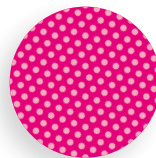
|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Academic advice offered in general                                    | 2.3   | 3.0     | 3.5 | 3.4   | 3.1    |
| Assistance/advice for your final examination                          | 3.0   | 3.2     | 3.5 | 3.9   | 3.4    |
| Course content of major   | 3.4   | 3.4     | 4.0 | 3.7   | 3.6    |
| Variety of courses offered  | 3.5   | 3.4     | 3.8 | 3.2   | 3.5    |
| Design of degree programme  | 2.7   | 3.2     | 3.7 | 3.1   | 3.2    |
| Testing/grading system  | 2.7   | 3.1     | 3.5 | 3.1   | 3.1    |
| Opportunity to choose courses and areas of specialisation             | 3.3   | 3.5     | 3.6 | 3.3   | 3.4    |
| Practical emphasis of teaching and learning                           | 2.1   | 2.5     | 3.3 | 3.0   | 2.7    |
| Teaching quality  | 3.3   | 3.4     | 3.7 | 2.7   | 3.3    |
| Chances to participate in research projects                           | 2.1   | 2.5     | 2.6 | 2.4   | 2.4    |
| Research emphasis of teaching and learning                            | 2.1   | 2.6     | 2.9 | 3.0   | 2.7    |
| Provision of work placements and other work experience                | 1.4   | 2.7     | 2.1 | 2.4   | 2.2    |
| Opportunity of out-of-class contacts with teaching staff              | 2.3   | 2.4     | 2.9 | 2.8   | 2.6    |
| Contacts with fellow students   | 3.8   | 4.1     | 3.9 | 3.3   | 3.8    |
| Chance for students to have an impact on university policies          | 2.0   | 2.6     | 2.6 | 2.3   | 2.4    |
| Equipment and stocking of libraries                                   | 2.9   | 3.4     | 3.6 | 3.5   | 3.4    |
| Supply of teaching material   | 2.6   | 3.1     | 3.4 | 3.2   | 3.1    |
| Quality of technical equipment (e.g. PC, measuring instruments, etc.) | 2.2   | 3.0     | 3.4 | 3.0   | 2.9    |
| Count   | 308   | 390     | 314 | 330   | 1 342  |

Question B9: How do you rate the study provision and study conditions you experienced in the course of study that you graduated from in 1994 or 1995? Scale of answers from 1 = 'Very bad' to 5 = 'Very good'.

**Table 7 Rating of study provisions and conditions, by country (%; responses 1 and 2)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Academic advice offered in general                                    | 57    | 34      | 11  | 18    | 30     |
| Assistance/advice for your final examination                          | 37    | 26      | 16  | 12    | 23     |
| Course content of major   | 10    | 9       | 4   | 8     | 8      |
| Variety of courses offered  | 13    | 14      | 11  | 28    | 17     |
| Design of degree programme  | 38    | 18      | 10  | 26    | 23     |
| Testing/grading system  | 40    | 26      | 11  | 18    | 24     |
| Opportunity to choose courses and areas of specialisation             | 23    | 17      | 20  | 23    | 21     |
| Practical emphasis of teaching and learning                           | 70    | 52      | 19  | 30    | 43     |
| Teaching quality  | 16    | 13      | 6   | 43    | 20     |
| Chances to participate in research projects                           | 70    | 57      | 52  | 55    | 58     |
| Research emphasis of teaching and learning                            | 68    | 48      | 36  | 29    | 45     |
| Provision of work placements and other work experience                | 91    | 47      | 69  | 58    | 65     |
| Opportunity of out-of-class contacts with teaching staff              | 59    | 59      | 38  | 44    | 51     |
| Contacts with fellow students   | 11    | 5       | 11  | 22    | 12     |
| Chance for students to have an impact on university policies          | 69    | 44      | 48  | 57    | 54     |
| Equipment and stocking of libraries                                   | 32    | 20      | 19  | 22    | 23     |
| Supply of teaching material   | 48    | 25      | 15  | 21    | 27     |
| Quality of technical equipment (e.g. PC, measuring instruments, etc.) | 63    | 31      | 21  | 36    | 37     |
| Count   | 308   | 390     | 314 | 330   | 1 342  |

Question B9: How do you rate the study provision and study conditions you experienced in the course of study that you graduated from in 1994 or 1995? Scale of answers from 1 = 'Very bad' to 5 = 'Very good'.



**Table 8 Rating of study provisions and conditions, by country (%; responses 4 and 5)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| Academic advice offered in general                                    | 12    | 32      | 51  | 47    | 36     |
| Assistance/advice for your final examination                          | 40    | 44      | 53  | 71    | 52     |
| Course content of major   | 47    | 47      | 75  | 65    | 58     |
| Variety of courses offered  | 49    | 50      | 64  | 38    | 50     |
| Design of degree programme  | 17    | 36      | 58  | 30    | 35     |
| Testing/grading system  | 21    | 36      | 54  | 23    | 34     |
| Opportunity to choose courses and areas of specialisation             | 45    | 53      | 58  | 46    | 51     |
| Practical emphasis of teaching and learning                           | 9     | 20      | 41  | 27    | 24     |
| Teaching quality  | 40    | 46      | 60  | 15    | 40     |
| Chances to participate in research projects                           | 10    | 26      | 26  | 14    | 19     |
| Research emphasis of teaching and learning                            | 14    | 28      | 34  | 27    | 26     |
| Provision of work placements and other work experience                | 3     | 26      | 19  | 18    | 17     |
| Opportunity of out-of-class contacts with teaching staff              | 21    | 21      | 33  | 29    | 26     |
| Contacts with fellow students   | 61    | 78      | 73  | 46    | 65     |
| Chance for students to have an impact on university policies          | 9     | 13      | 20  | 9     | 13     |
| Equipment and stocking of libraries                                   | 28    | 50      | 61  | 58    | 49     |
| Supply of teaching material   | 19    | 37      | 44  | 36    | 34     |
| Quality of technical equipment (e.g. PC, measuring instruments, etc.) | 15    | 35      | 51  | 38    | 35     |
| Count   | 308   | 390     | 314 | 330   | 1 342  |

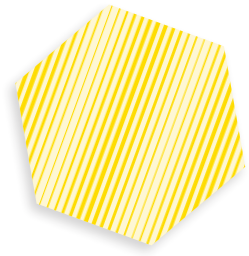
Question B9: How do you rate the study provision and study conditions you experienced in the course of study that you graduated from in 1994 or 1995? Scale of answers from 1 = 'Very bad' to 5 = 'Very good'.

### C. Job search and sequence of professional activities

**Table 9 Job search since graduation, by country (%; multiple responses)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Job Search Since Graduation</b>              |       |         |     |       |        |
| Yes, I sought a job since graduation            | 79    | 71      | 83  | 73    | 76     |
| No, I set up my own business/self-employment    | 4     | 2       | 2   | 0     | 2      |
| No, I continued the job I had before graduation | 10    | 4       | 7   | 2     | 5      |
| No, I continued to study                        | 8     | 8       | 7   | 19    | 11     |
| No, I obtained work without actually searching  | 8     | 19      | 6   | 4     | 10     |
| Other   | 4     | 3       | 4   | 2     | 3      |
| Total   | 113   | 108     | 109 | 100   | 107    |
| Count   | 304   | 381     | 314 | 329   | 1 328  |

Question C1: Did you ever seek a job since graduation 1994 or 1995? Exclude applications for casual and vacation jobs.



**Table 10 Methods of job search, by country (%; multiple responses)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Methods of Job Search</b>  |       |         |     |       |        |
| I applied for an advertised vacancy   | 48    | 79      | 67  | 76    | 68     |
| I contacted employers without knowing about a vacancy                                     | 76    | 64      | 38  | 17    | 49     |
| I launched advertisements by myself   | 13    | 11      | 2   | 1     | 7      |
| I was approached by an employer   | 22    | 15      | 7   | 7     | 13     |
| I contacted a public employment agency  | 42    | 50      | 25  | 12    | 32     |
| I contacted a commercial employment agency  | 16    | 7       | 23  | 13    | 15     |
| I enlisted the help of the careers/placement office of my institution of higher education | 8     |         | 13  | 37    | 64     |
| I enlisted the help of teaching staff of the institution of higher education              | 16    | 10      | 8   | 29    | 16     |
| I established contacts while working during the course of study                           | 14    | 27      | 15  | 3     | 15     |
| I used other personal connections/contacts (e.g. parents, relatives, friends)             | 52    | 31      | 26  | 24    | 33     |
| I started my own business/self-employment   | 9     | 8       | 2   | 0     | 5      |
| Other   | 8     | 8       | 6   | 10    | 8      |
| Total   | 325   | 322     | 256 | 257   | 290    |
| Count   | 233   | 266     | 252 | 238   | 989    |

Question C4: How did you try to find the first job after graduation? Multiple reply possible.

**Table 11 Most important method for getting first job after graduation, by country (%)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Most important method for getting the first job after graduation</b>                   |       |         |     |       |        |
| I applied for an advertised vacancy   | 13    | 33      | 42  | 37    | 32     |
| I contacted employers without knowing about a vacancy                                     | 20    | 24      | 12  | 2     | 14     |
| I launched advertisements by myself   | 0     | 0       | 0   | 0     | 0      |
| I was approached by an employer   | 6     | 4       | 4   | 2     | 4      |
| I contacted a public employment agency  | 0     | 2       | 3   | 3     | 2      |
| I contacted a commercial employment agency  | 1     | 0       | 8   | 4     | 4      |
| I enlisted the help of the careers/placement office of my institution of higher education | 1     | 1       | 6   | 19    | 7      |
| I enlisted the help of teaching staff of the institution of higher education              | 4     | 5       | 2   | 11    | 6      |
| I established contacts while working during the course of study                           | 7     | 9       | 6   | 0     | 6      |
| I used other personal connections/contacts (e.g. parents, relatives, friends)             | 30    | 12      | 12  | 15    | 17     |
| I started my own business/self-employment   | 6     | 4       | 1   | 0     | 3      |
| Other   | 10    | 5       | 3   | 7     | 6      |
| Total   | 100   | 100     | 100 | 100   | 100    |
| Count   | 201   | 251     | 229 | 227   | 908    |

Question C5: Which method was the most important for getting your first job after graduation in 1994 or 1995? Please fill in the item number from question C4.



**Table 12** Number of employers contacted before first job after graduation, by country (means)

|                                      | Italy | Germany | UK  | Japan | #Total |
|--------------------------------------|-------|---------|-----|-------|--------|
| <b>Number of employers contacted</b> |       |         |     |       |        |
| Arithm. mean                         | 15    | 34      | 31  | 16    | 25     |
| Median                               | 5     | 19      | 10  | 6     | 10     |
| Standardabw.                         | 25    | 50      | 73  | 24    | 49     |
| Minimum                              | 1     | 1       | 1   | 1     | 1      |
| Maximum                              | 200   | 400     | 876 | 200   | 876    |
| Count                                | 175   | 233     | 209 | 219   | 836    |

Question C6: How many employers did you contact (by e.g. letter) before you took up your first job after graduation in 1994 or 1995?

**Table 13** Duration of job search for first job after graduation in 1994/95, by country (means)

|                               | Italy | Germany | UK  | Japan | #Total |
|-------------------------------|-------|---------|-----|-------|--------|
| <b>Duration of job search</b> |       |         |     |       |        |
| Arithm. mean                  | 9     | 6       | 5   | 6     | 6      |
| Median                        | 6     | 4       | 3   | 5     | 5      |
| Standardabw.                  | 8     | 6       | 4   | 5     | 6      |
| Minimum                       | 1     | 1       | 1   | 1     | 1      |
| Maximum                       | 48    | 48      | 24  | 36    | 48     |
| Count                         | 183   | 228     | 165 | 222   | 798    |

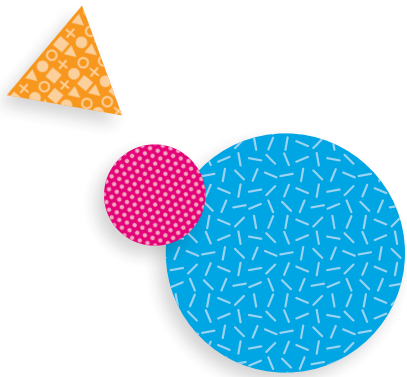
Question C7: How many months have you sought altogether (before or after graduation) for your first job after graduation in 1994 or 1995, which you consider not to be a casual job?

## D. Employment and work

**Table 14** Kind of major activity four years after graduation, by country (%)

|                                  | Italy | Germany | UK  | Japan | #Total |
|----------------------------------|-------|---------|-----|-------|--------|
| <b>Kind of major activity</b>    |       |         |     |       |        |
| Employed                         | 60    | 80      | 74  | 85    | 75     |
| Self-employed                    | 21    | 7       | 6   | 2     | 9      |
| Not employed, seeking employment | 5     | 2       | 3   | 3     | 3      |
| Professional training            | 4     | 1       | 2   | 1     | 2      |
| Advanced academic study          | 6     | 4       | 13  | 5     | 7      |
| Child rearing, family care       | 3     | 3       | 1   | 4     | 3      |
| Other                            | 1     | 2       | 1   | 1     | 1      |
| Total                            | 100   | 100     | 100 | 100   | 100    |
| Count                            | 302   | 390     | 305 | 328   | 1 325  |

Question C10A: What is your current major activity?



**Table 15 Full-time employment, by country (%)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| <b>Full-time or part-time activity</b> |       |         |     |       |        |
| Full-time                              | 78    | 88      | 96  | 96    | 90     |
| Part-time                              | 22    | 12      | 4   | 4     | 10     |
| Total                                  | 100   | 100     | 100 | 100   | 100    |
| Count                                  | 238   | 341     | 269 | 268   | 1 116  |

Question C10B: Are you full-time or part-time employed?

**Table 16 Type of contract, by country (%)**

|                         | Italy | Germany | UK  | Japan | #Total |
|-------------------------|-------|---------|-----|-------|--------|
| <b>Type of contract</b> |       |         |     |       |        |
| Permanent               | 74    | 77      | 87  | 87    | 82     |
| Temporary               | 26    | 23      | 13  | 13    | 18     |
| Total                   | 100   | 100     | 100 | 100   | 100    |
| Count                   | 171   | 306     | 244 | 275   | 996    |

Question C10C: Do you have a permanent or temporary contract?

**Table 17 Level of Occupation, by Country (%)**

|                            | Italy | Germany | UK  | Japan | #Total |
|----------------------------|-------|---------|-----|-------|--------|
| <b>Level of Occupation</b> |       |         |     |       |        |
| Senior manager             | 3     | 3       | 21  | 5     | 8      |
| Professionals              | 62    | 83      | 57  | 50    | 64     |
| Technicians                | 27    | 12      | 13  | 3     | 13     |
| Clerks                     | 5     | 1       | 5   | 29    | 10     |
| Service workers            | 3     | 0       | 3   | 10    | 4      |
| Skilled agricultur         | 0     | 1       | 0   | 1     | 0      |
| Craft and related          | 0     | 0       | 0   | 1     | 0      |
| Plant and machine          | 0     | 0       | 0   | 2     | 1      |
| Elementary occupation      | 0     | 0       | 0   | 0     | 0      |
| Total                      | 100   | 100     | 100 | 100   | 100    |
| Count                      | 239   | 297     | 246 | 256   | 1 038  |

Question C10D: What is your job title?





**Table 18 Current professional situation, by country (%; multiple responses)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Current professional situation</b>             |       |         |     |       |        |
| I have regular employment/I am self-employed      | 66    | 93      | 95  | 84    | 85     |
| I have casual jobs related to my study            | 21    | 7       | 3   | 5     | 9      |
| I have casual jobs not related to my study        | 5     | 1       | 1   | 8     | 4      |
| I have more than one job                          | 11    | 5       | 2   | 4     | 5      |
| I am currently doing military or civilian service | 0     | 0       | 0   | 0     | 0      |
| Other   | 9     | 3       | 2   | 5     | 4      |
| Total   | 112   | 108     | 102 | 105   | 107    |
| Count   | 273   | 360     | 259 | 292   | 1 184  |

Question D1: If you are currently employed/self-employed: How would you describe your current professional situation?  
Multiple reply possible.

**Table 19 Kind of current employer/institution, by country (%)**

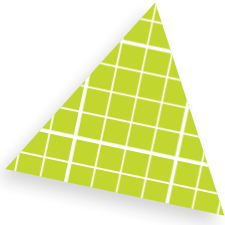
|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Kind of current employer/institution</b> |       |         |     |       |        |
| Public employer                             | 22    | 28      | 27  | 20    | 24     |
| Non-profit organisation                     | 2     | 1       | 4   | 1     | 2      |
| Private employer                            | 55    | 59      | 60  | 74    | 62     |
| Self-employed                               | 20    | 8       | 5   | 1     | 8      |
| Other                                       | 2     | 4       | 3   | 4     | 3      |
| Total                                       | 100   | 100     | 100 | 100   | 100    |
| Count                                       | 259   | 358     | 260 | 279   | 1 156  |

Question D4: Please state the kind of your current employer/institution (if several, please refer to main employer)?  
Please mark one single item only.

**Table 20 Economic sector of current work, by country (%)**

|                        | Italy | Germany | UK  | Japan | #Total |
|------------------------|-------|---------|-----|-------|--------|
| <b>Economic sector</b> |       |         |     |       |        |
| Production             | 42    | 47      | 35  | 55    | 45     |
| Business               | 30    | 27      | 35  | 22    | 28     |
| Public admin.          | 8     | 4       | 8   | 11    | 7      |
| Education              | 20    | 23      | 22  | 13    | 20     |
| Total                  | 100   | 100     | 100 | 100   | 100    |
| Count                  | 250   | 301     | 260 | 263   | 1 074  |

Question D5: In which economic sector are you currently working?



**Table 21 Size of company, by country (means)**

|   | Italy  | Germany | UK     | Japan  | #Total  |
|---|--------|---------|--------|--------|---------|
| <b>Number of people in the location where you currently work</b>                      |        |         |        |        |         |
| Arithm. mean  | 141    | 1,333   | 909    | 441    | 786     |
| Median  | 20     | 100     | 100    | 60     | 58      |
| Standardabw.  | 558    | 5 320   | 5 330  | 1 423  | 4 096   |
| Minimum   | 1      | 1       | 1      | 1      | 1       |
| Maximum   | 6 000  | 48 000  | 80 200 | 15 000 | 80 200  |
| Count   | 191    | 320     | 241    | 238    | 990     |
| <b>Number of people in the entire organisation if there is more than one location</b> |        |         |        |        |         |
| Arithm. mean  | 3 279  | 45 680  | 12 346 | 4 237  | 18 547  |
| Median  | 100    | 3 200   | 3 000  | 850    | 1 000   |
| Standardabw.  | 12 406 | 110 912 | 20 073 | 10 115 | 65 038  |
| Minimum   | 1      | 1       | 1      | 3      | 1       |
| Maximum   | 80 000 | 900 000 | 90 000 | 80 000 | 900 000 |
| Count   | 86     | 206     | 145    | 236    | 673     |

Question D9: Please estimate, to the best of your ability, the approximate number of people who are working in...

**Table 22 Annual gross income, by country (including extra payments and second jobs), by country (means)**

|                            | Italy | Germany | UK  | Japan | #Total |
|----------------------------|-------|---------|-----|-------|--------|
| <b>Annual Gross Income</b> |       |         |     |       |        |
| Arithm. mean               | 18    | 36      | 31  | 28    | 29     |
| Median                     | 15    | 36      | 27  | 29    | 29     |
| Standardabw.               | 17    | 13      | 18  | 10    | 16     |
| Minimum                    | 1     | 3       | 2   | 1     | 1      |
| Maximum                    | 158   | 87      | 150 | 69    | 158    |
| Count                      | 208   | 340     | 249 | 272   | 1 069  |

Question D11: What is your approximate annual gross income?: (Thousand.)



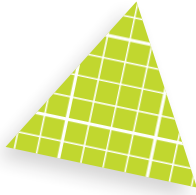


## E. Acquired competencies and work requirements

**Table 23 Competencies at time of graduation, by country (arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 3.8   | 3.6     | 3.7 | 3.2   | 3.6    |
| Cross-disciplinary thinking/knowledge                              | 3.5   | 3.5     | 3.6 | 3.0   | 3.4    |
| Field-specific theoretical knowledge                               | 3.7   | 3.9     | 3.8 | 3.4   | 3.7    |
| Field-specific knowledge of methods                                | 3.4   | 3.5     | 3.5 | 3.2   | 3.4    |
| Foreign language proficiency                                       | 3.0   | 3.1     | 2.1 | 2.7   | 2.7    |
| Computer skills  | 2.6   | 3.2     | 3.3 | 2.7   | 3.0    |
| Understanding complex social, organisational and technical systems | 2.3   | 3.1     | 2.8 | 2.5   | 2.7    |
| Planning, coordinating and organising                              | 2.9   | 3.1     | 3.4 | 2.5   | 3.0    |
| Applying rules and regulations                                     | 2.4   | 2.8     | 3.2 | 2.8   | 2.8    |
| Economic reasoning   | 2.4   | 2.5     | 2.7 | 2.4   | 2.5    |
| Documenting ideas and information                                  | 3.3   | 3.2     | 3.8 | 3.0   | 3.3    |
| Problem-solving ability  | 3.5   | 3.6     | 3.9 | 3.2   | 3.6    |
| Analytical competencies  | 3.8   | 3.8     | 3.9 | 3.3   | 3.7    |
| Learning abilities   | 4.3   | 4.1     | 4.2 | 3.5   | 4.0    |
| Reflective thinking, assessing one's own work                      | 3.8   | 3.4     | 3.7 | 3.1   | 3.5    |
| Creativity   | 3.7   | 3.4     | 3.4 | 3.1   | 3.4    |
| Working under pressure   | 3.5   | 3.5     | 3.9 | 3.1   | 3.5    |
| Accuracy, attention to detail                                      | 3.8   | 3.6     | 3.9 | 3.1   | 3.6    |
| Time management  | 3.4   | 3.1     | 3.6 | 3.0   | 3.2    |
| Negotiating  | 2.7   | 2.1     | 2.8 | 2.5   | 2.5    |
| Fitness for work   | 3.5   | 3.6     | 3.4 | 3.4   | 3.5    |
| Manual skill   | 3.1   | 3.1     | 2.6 | 3.3   | 3.0    |
| Working independently  | 3.7   | 4.1     | 4.1 | 3.0   | 3.7    |
| Working in a team  | 3.6   | 3.5     | 3.7 | 3.3   | 3.5    |
| Initiative   | 3.5   | 3.4     | 3.8 | 3.5   | 3.5    |
| Adaptability   | 3.7   | 3.4     | 3.8 | 3.6   | 3.6    |
| Assertiveness, decisiveness, persistence                           | 3.8   | 3.4     | 3.3 | 3.3   | 3.5    |
| Power of concentration   | 4.0   | 4.0     | 3.9 | 3.7   | 3.9    |
| Getting personally involved  | 3.9   | 3.7     | 3.5 | 3.7   | 3.7    |
| Loyalty, integrity   | 4.5   | 3.5     | 3.7 | 3.9   | 3.9    |
| Critical thinking  | 4.0   | 3.7     | 3.7 | 3.3   | 3.7    |
| Oral communication skill   | 3.8   | 3.5     | 3.7 | 3.3   | 3.6    |
| Written communication skill  | 3.8   | 3.7     | 4.1 | 3.2   | 3.7    |
| Tolerance, appreciating of different points of view                | 3.8   | 3.6     | 3.7 | 3.4   | 3.6    |
| Leadership   | 3.0   | 2.3     | 3.1 | 2.9   | 2.8    |
| Taking responsibilities, decision                                  | 3.5   | 3.1     | 3.5 | 2.9   | 3.2    |
| Count  | 303   | 391     | 311 | 327   | 1 332  |

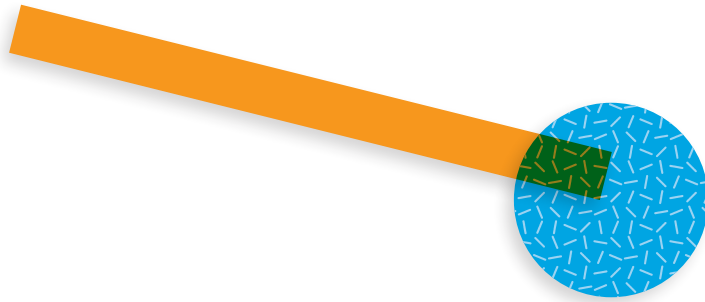
Question E1A: Please, state the extent to which you had the following competencies at the time of graduation in 1994 or 1995? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.



**Table 24 Competencies at time of graduation, by country (%; responses 1 and 2)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 1     | 9       | 7   | 24    | 10     |
| Cross-disciplinary thinking/knowledge                              | 10    | 11      | 11  | 29    | 15     |
| Field-specific theoretical knowledge                               | 11    | 5       | 13  | 20    | 12     |
| Field-specific knowledge of methods                                | 21    | 14      | 18  | 27    | 20     |
| Foreign language proficiency                                       | 35    | 31      | 72  | 51    | 46     |
| Computer skills  | 49    | 25      | 26  | 48    | 36     |
| Understanding complex social, organisational and technical systems | 59    | 29      | 38  | 50    | 43     |
| Planning, coordinating and organising                              | 36    | 29      | 17  | 50    | 33     |
| Applying rules and regulations                                     | 57    | 40      | 24  | 38    | 40     |
| Economic reasoning   | 56    | 52      | 43  | 55    | 52     |
| Documenting ideas and information                                  | 22    | 25      | 9   | 27    | 21     |
| Problem-solving ability  | 12    | 11      | 5   | 19    | 12     |
| Analytical competencies  | 7     | 7       | 8   | 17    | 10     |
| Learning abilities   | 3     | 1       | 2   | 10    | 4      |
| Reflective thinking, assessing one's own work                      | 9     | 14      | 12  | 24    | 15     |
| Creativity   | 13    | 20      | 17  | 24    | 18     |
| Working under pressure   | 21    | 16      | 10  | 32    | 20     |
| Accuracy, attention to detail                                      | 11    | 12      | 5   | 29    | 14     |
| Time management  | 18    | 31      | 16  | 33    | 25     |
| Negotiating  | 45    | 71      | 43  | 54    | 54     |
| Fitness for work   | 16    | 12      | 22  | 21    | 17     |
| Manual skill   | 35    | 31      | 48  | 25    | 34     |
| Working independently  | 12    | 4       | 6   | 31    | 13     |
| Working in a team  | 12    | 17      | 18  | 21    | 17     |
| Initiative   | 15    | 18      | 9   | 16    | 15     |
| Adaptability   | 11    | 16      | 8   | 10    | 11     |
| Assertiveness, decisiveness, persistence                           | 11    | 17      | 23  | 26    | 19     |
| Power of concentration   | 6     | 3       | 6   | 10    | 6      |
| Getting personally involved  | 7     | 9       | 16  | 8     | 10     |
| Loyalty, integrity   | 2     | 20      | 16  | 5     | 11     |
| Critical thinking  | 5     | 8       | 10  | 15    | 10     |
| Oral communication skill   | 9     | 17      | 14  | 22    | 16     |
| Written communication skill  | 8     | 8       | 5   | 24    | 11     |
| Tolerance, appreciating of different points of view                | 9     | 14      | 11  | 16    | 13     |
| Leadership   | 30    | 58      | 28  | 39    | 40     |
| Taking responsibilities, decision                                  | 17    | 28      | 19  | 36    | 25     |
| Count  | 303   | 391     | 311 | 327   | 1 332  |

Question E1A: Please, state the extent to which you had the following competencies at the time of graduation in 1994 or 1995? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.



**Table 25 Competencies at time of graduation, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 68    | 57      | 58  | 44    | 57     |
| Cross-disciplinary thinking/knowledge                              | 51    | 56      | 56  | 34    | 50     |
| Field-specific theoretical knowledge                               | 65    | 70      | 63  | 59    | 65     |
| Field-specific knowledge of methods                                | 46    | 54      | 53  | 44    | 49     |
| Foreign language proficiency                                       | 30    | 35      | 15  | 30    | 28     |
| Computer skills  | 24    | 41      | 44  | 33    | 36     |
| Understanding complex social, organisational and technical systems | 10    | 34      | 25  | 17    | 22     |
| Planning, coordinating and organising                              | 30    | 34      | 48  | 18    | 32     |
| Applying rules and regulations                                     | 17    | 25      | 38  | 27    | 27     |
| Economic reasoning   | 16    | 19      | 25  | 14    | 18     |
| Documenting ideas and information                                  | 43    | 38      | 63  | 34    | 44     |
| Problem-solving ability  | 53    | 58      | 71  | 42    | 56     |
| Analytical competencies  | 66    | 68      | 70  | 45    | 62     |
| Learning abilities   | 85    | 87      | 83  | 56    | 78     |
| Reflective thinking, assessing one's own work                      | 63    | 47      | 59  | 36    | 51     |
| Creativity   | 57    | 46      | 46  | 34    | 46     |
| Working under pressure   | 53    | 53      | 68  | 38    | 53     |
| Accuracy, attention to detail                                      | 60    | 57      | 70  | 34    | 55     |
| Time management  | 48    | 32      | 55  | 34    | 42     |
| Negotiating  | 22    | 6       | 25  | 19    | 17     |
| Fitness for work   | 53    | 55      | 48  | 51    | 52     |
| Manual skill   | 37    | 40      | 25  | 44    | 37     |
| Working independently  | 61    | 76      | 80  | 35    | 63     |
| Working in a team  | 54    | 54      | 62  | 48    | 54     |
| Initiative   | 51    | 45      | 63  | 54    | 53     |
| Adaptability   | 57    | 48      | 59  | 61    | 56     |
| Assertiveness, decisiveness, persistence                           | 65    | 49      | 41  | 46    | 50     |
| Power of concentration   | 71    | 76      | 69  | 66    | 71     |
| Getting personally involved  | 65    | 62      | 51  | 62    | 60     |
| Loyalty, integrity   | 89    | 52      | 58  | 70    | 67     |
| Critical thinking  | 75    | 62      | 62  | 41    | 60     |
| Oral communication skill   | 62    | 49      | 58  | 46    | 53     |
| Written communication skill  | 61    | 62      | 75  | 40    | 59     |
| Tolerance, appreciating of different points of view                | 57    | 56      | 61  | 49    | 56     |
| Leadership   | 33    | 15      | 36  | 26    | 27     |
| Taking responsibilities, decision                                  | 52    | 38      | 53  | 28    | 42     |
| Count  | 303   | 391     | 311 | 327   | 1 332  |

Question E1A: Please, state the extent to which you had the following competencies at the time of graduation in 1994 or 1995? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.



**Table 26 Work requirements, by country (arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 3.6   | 3.4     | 3.7 | 4.0   | 3.6    |
| Cross-disciplinary thinking/knowledge                              | 3.7   | 3.9     | 3.8 | 3.3   | 3.7    |
| Field-specific theoretical knowledge                               | 3.5   | 3.5     | 3.7 | 3.6   | 3.6    |
| Field-specific knowledge of methods                                | 3.7   | 3.6     | 3.7 | 3.5   | 3.6    |
| Foreign language proficiency                                       | 3.3   | 3.2     | 1.8 | 3.0   | 2.9    |
| Computer skills  | 3.7   | 4.0     | 4.2 | 4.0   | 4.0    |
| Understanding complex social, organisational and technical systems | 3.0   | 3.8     | 3.2 | 3.5   | 3.4    |
| Planning, coordinating and organising                              | 4.0   | 4.3     | 4.4 | 3.8   | 4.2    |
| Applying rules and regulations                                     | 3.5   | 3.5     | 4.0 | 3.8   | 3.7    |
| Economic reasoning   | 3.6   | 3.8     | 3.3 | 3.9   | 3.7    |
| Documenting ideas and information                                  | 4.0   | 3.9     | 4.1 | 4.0   | 4.0    |
| Problem-solving ability  | 4.3   | 4.3     | 4.2 | 4.3   | 4.3    |
| Analytical competencies  | 4.0   | 3.9     | 4.0 | 4.1   | 4.0    |
| Learning abilities   | 4.1   | 3.9     | 4.2 | 4.0   | 4.0    |
| Reflective thinking, assessing one's own work                      | 4.1   | 3.8     | 4.1 | 3.9   | 4.0    |
| Creativity   | 3.7   | 3.8     | 3.7 | 3.8   | 3.8    |
| Working under pressure   | 4.3   | 4.2     | 4.6 | 4.2   | 4.3    |
| Accuracy, attention to detail                                      | 4.1   | 4.1     | 4.5 | 4.2   | 4.2    |
| Time management  | 4.2   | 4.1     | 4.5 | 4.2   | 4.2    |
| Negotiating  | 3.7   | 3.4     | 3.8 | 3.9   | 3.7    |
| Fitness for work   | 3.7   | 4.2     | 3.8 | 4.3   | 4.0    |
| Manual skill   | 3.0   | 2.8     | 2.6 | 3.5   | 3.0    |
| Working independently  | 4.1   | 4.6     | 4.3 | 3.9   | 4.3    |
| Working in a team  | 4.0   | 4.0     | 4.4 | 4.2   | 4.1    |
| Initiative   | 4.0   | 4.1     | 4.4 | 4.1   | 4.1    |
| Adaptability   | 4.2   | 3.8     | 4.4 | 4.2   | 4.1    |
| Assertiveness, decisiveness, persistence                           | 4.2   | 4.2     | 4.4 | 3.9   | 4.2    |
| Power of concentration   | 4.1   | 4.1     | 4.2 | 4.2   | 4.1    |
| Getting personally involved  | 4.0   | 4.2     | 3.9 | 4.0   | 4.0    |
| Loyalty, integrity   | 4.1   | 4.0     | 4.1 | 4.1   | 4.1    |
| Critical thinking  | 3.9   | 3.7     | 3.9 | 3.7   | 3.8    |
| Oral communication skill   | 4.2   | 4.2     | 4.5 | 4.2   | 4.3    |
| Written communication skills                                       | 3.8   | 4.0     | 4.3 | 3.9   | 4.0    |
| Tolerance, appreciating of different points of view                | 4.1   | 3.8     | 4.1 | 4.0   | 4.0    |
| Leadership   | 3.5   | 3.5     | 3.9 | 3.6   | 3.6    |
| Taking responsibilities, decision                                  | 4.1   | 4.2     | 4.4 | 3.8   | 4.1    |
| Count  | 257   | 359     | 280 | 285   | 1 181  |

Question E1B: To what extent are the competencies required in your current work. Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 27 Work requirements, by country (%; responses 1 and 2)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 14    | 18      | 13  | 10    | 14     |
| Cross-disciplinary thinking/knowledge                              | 15    | 8       | 13  | 21    | 14     |
| Field-specific theoretical knowledge                               | 20    | 21      | 20  | 23    | 21     |
| Field-specific knowledge of methods                                | 17    | 18      | 22  | 24    | 20     |
| Foreign language proficiency                                       | 32    | 32      | 80  | 43    | 46     |
| Computer skills  | 18    | 9       | 7   | 9     | 10     |
| Understanding complex social, organisational and technical systems | 32    | 8       | 26  | 16    | 19     |
| Planning, coordinating and organising                              | 9     | 4       | 3   | 11    | 7      |
| Applying rules and regulations                                     | 21    | 17      | 8   | 9     | 14     |
| Economic reasoning   | 20    | 15      | 27  | 11    | 18     |
| Documenting ideas and information                                  | 10    | 8       | 7   | 7     | 8      |
| Problem-solving ability  | 2     | 2       | 6   | 3     | 3      |
| Analytical competencies  | 7     | 6       | 8   | 6     | 7      |
| Learning abilities   | 4     | 6       | 5   | 6     | 5      |
| Reflective thinking, assessing one's own work                      | 4     | 7       | 8   | 6     | 7      |
| Creativity   | 17    | 10      | 16  | 15    | 14     |
| Working under pressure   | 4     | 4       | 1   | 6     | 4      |
| Accuracy, attention to detail                                      | 5     | 4       | 1   | 4     | 3      |
| Time management  | 3     | 5       | 2   | 5     | 4      |
| Negotiating  | 19    | 24      | 15  | 13    | 18     |
| Fitness for work   | 14    | 1       | 9   | 2     | 6      |
| Manual skill   | 40    | 38      | 51  | 22    | 38     |
| Working independently  | 5     | 1       | 3   | 11    | 5      |
| Working in a team  | 7     | 8       | 4   | 6     | 6      |
| Initiative   | 9     | 4       | 3   | 4     | 5      |
| Adaptability   | 7     | 6       | 1   | 2     | 4      |
| Assertiveness, decisiveness, persistence                           | 4     | 3       | 2   | 8     | 4      |
| Power of concentration   | 4     | 3       | 4   | 2     | 3      |
| Getting personally involved  | 5     | 3       | 10  | 4     | 5      |
| Loyalty, integrity   | 11    | 6       | 8   | 7     | 8      |
| Critical thinking  | 9     | 13      | 9   | 12    | 11     |
| Oral communication skill   | 5     | 3       | 1   | 4     | 3      |
| Written communication skills                                       | 9     | 8       | 7   | 9     | 8      |
| Tolerance, appreciating of different points of view                | 7     | 7       | 7   | 5     | 6      |
| Leadership   | 19    | 21      | 11  | 16    | 17     |
| Taking responsibilities, decision                                  | 9     | 3       | 3   | 13    | 7      |
| Count  | 257   | 359     | 280 | 285   | 1 181  |

Question E1B: To what extent are the competencies required in your current work. Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

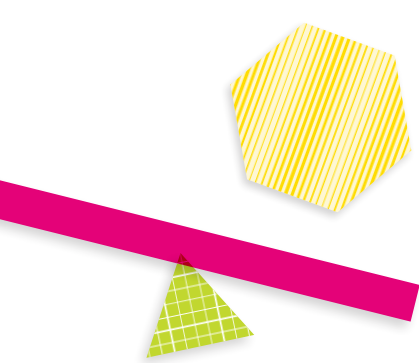


**Table 28 Work requirements, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Broad general knowledge  | 56    | 49      | 59  | 75    | 59     |
| Cross-disciplinary thinking/knowledge                              | 63    | 72      | 67  | 46    | 62     |
| Field-specific theoretical knowledge                               | 52    | 55      | 64  | 60    | 58     |
| Field-specific knowledge of methods                                | 61    | 62      | 61  | 55    | 60     |
| Foreign language proficiency                                       | 47    | 49      | 11  | 43    | 38     |
| Computer skills  | 61    | 78      | 81  | 80    | 75     |
| Understanding complex social, organisational and technical systems | 39    | 69      | 43  | 55    | 53     |
| Planning, coordinating and organising                              | 73    | 85      | 88  | 67    | 79     |
| Applying rules and regulations                                     | 54    | 56      | 71  | 64    | 61     |
| Economic reasoning   | 60    | 68      | 46  | 71    | 62     |
| Documenting ideas and information                                  | 75    | 73      | 76  | 74    | 75     |
| Problem-solving ability  | 82    | 90      | 81  | 84    | 85     |
| Analytical competencies  | 75    | 72      | 71  | 77    | 74     |
| Learning abilities   | 75    | 74      | 76  | 75    | 75     |
| Reflective thinking, assessing one's own work                      | 81    | 68      | 76  | 67    | 73     |
| Creativity   | 65    | 68      | 56  | 61    | 63     |
| Working under pressure   | 84    | 80      | 93  | 82    | 84     |
| Accuracy, attention to detail                                      | 76    | 81      | 91  | 81    | 82     |
| Time management  | 80    | 80      | 92  | 79    | 82     |
| Negotiating  | 63    | 52      | 66  | 70    | 62     |
| Fitness for work   | 57    | 84      | 66  | 84    | 74     |
| Manual skill   | 41    | 32      | 28  | 51    | 38     |
| Working independently  | 78    | 96      | 86  | 72    | 84     |
| Working in a team  | 76    | 75      | 87  | 81    | 80     |
| Initiative   | 73    | 82      | 88  | 80    | 81     |
| Adaptability   | 81    | 66      | 89  | 82    | 79     |
| Assertiveness, decisiveness, persistence                           | 80    | 82      | 84  | 69    | 79     |
| Power of concentration   | 72    | 79      | 81  | 81    | 78     |
| Getting personally involved  | 71    | 84      | 65  | 70    | 73     |
| Loyalty, integrity   | 73    | 74      | 76  | 71    | 74     |
| Critical thinking  | 68    | 66      | 68  | 62    | 66     |
| Oral communication skill   | 79    | 83      | 92  | 80    | 84     |
| Written communication skills                                       | 60    | 77      | 83  | 70    | 73     |
| Tolerance, appreciating of different points of view                | 76    | 70      | 76  | 77    | 75     |
| Leadership   | 57    | 60      | 67  | 54    | 60     |
| Taking responsibilities, decision                                  | 79    | 82      | 84  | 65    | 78     |
| Count  | 257   | 359     | 280 | 285   | 1 181  |

Question E1B: To what extent are the competencies required in your current work. Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.





**Table 29 Utility of study, by country (arithmetic mean)**

|  | Italy | Germany | UK  | #Total |
|--|-------|---------|-----|--------|
| Preparing for your present work tasks        | 3.3   | 3.3     | 3.4 | 3.3    |
| Preparing for tasks in other spheres of life | 3.1   | 2.7     | 3.4 | 3.0    |
| Count  | 272   | 373     | 290 | 935    |

Question E2: To what extent has your study (you graduated from 1994 or 1995) been useful for...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 30 Utility of study, by country (%; responses 1 and 2)**

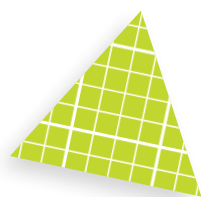
|  | Italy | Germany | UK  | #Total |
|--|-------|---------|-----|--------|
| Preparing for your present work tasks        | 23    | 23      | 20  | 22     |
| Preparing for tasks in other spheres of life | 27    | 41      | 20  | 31     |
| Count  | 272   | 373     | 290 | 935    |

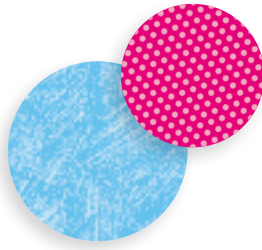
Question E2: To what extent has your study (you graduated from 1994 or 1995) been useful for...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 31 Utility of study, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | #Total |
|--|-------|---------|-----|--------|
| Preparing for your present work tasks        | 46    | 44      | 51  | 47     |
| Preparing for tasks in other spheres of life | 36    | 23      | 48  | 34     |
| Count  | 272   | 373     | 290 | 935    |

Question E2: To what extent has your study (you graduated from 1994 or 1995) been useful for...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.





## F. Relationship between higher education and work

**Table 32 Use of knowledge and skills acquired in the course of study, by country (%; arithmetic mean)**

|                                    | Italy | Germany | UK  | Japan | #Total |
|------------------------------------|-------|---------|-----|-------|--------|
| <b>Use of knowledge and skills</b> |       |         |     |       |        |
| 1 Not at all                       | 9     | 3       | 7   | 17    | 9      |
| 2                                  | 19    | 23      | 18  | 29    | 23     |
| 3                                  | 22    | 33      | 25  | 27    | 27     |
| 4                                  | 29    | 28      | 27  | 15    | 25     |
| 5 To a very high extent            | 21    | 14      | 23  | 12    | 17     |
| Total                              | 100   | 100     | 100 | 100   | 100    |
| Count                              | 257   | 357     | 275 | 275   | 1 164  |
| <b>Recorded values</b>             |       |         |     |       |        |
| Values 1 and 2                     | 28    | 26      | 25  | 46    | 31     |
| Value 3                            | 22    | 33      | 25  | 27    | 27     |
| Values 4 and 5                     | 50    | 41      | 50  | 27    | 42     |
| Arithmetic mean                    | 3.3   | 3.3     | 3.4 | 2.8   | 3.2    |

Question F1: If you take into consideration your current work tasks altogether: To what extent do you use the knowledge and skills acquired in the course of study (you graduated from 1994 or 1995)? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 33 Relationship between field of study and area of work, by country (%; multiple responses)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| <b>Relationship between field of study and area of work</b>        |       |         |     |       |        |
| My field of study is the only possible/by far the best field       | 45    | 31      | 37  | 28    | 35     |
| Some other fields could prepare for the area of work as well       | 31    | 46      | 37  | 20    | 34     |
| Another field would have been more useful                          | 9     | 11      | 14  | 12    | 11     |
| The field of study does not matter very much                       | 6     | 11      | 20  | 25    | 15     |
| Higher education studies are not at all related to my area of work | 13    | 9       | 18  | 15    | 13     |
| Others   | 2     | 2       | 1   | 0     | 1      |
| Total  | 104   | 111     | 127 | 100   | 110    |
| Count  | 256   | 359     | 264 | 279   | 1 158  |

Question F2: How would you characterise the relationship between your field of study and your area of work?



**Table 34 Appropriateness of level of education for employment and work, by country (%; arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| <b>Appropriateness of level of education for employment and work</b> |       |         |     |       |        |
| 1 Not at all appropriate   | 7     | 4       | 5   | 5     | 5      |
| 2  | 16    | 8       | 10  | 14    | 12     |
| 3  | 28    | 22      | 14  | 38    | 25     |
| 4  | 32    | 43      | 31  | 32    | 35     |
| 5 Completely appropriate   | 17    | 23      | 40  | 11    | 23     |
| Total  | 100   | 100     | 100 | 100   | 100    |
| Count  | 257   | 360     | 264 | 281   | 1 162  |
| <b>Recorded values</b>   |       |         |     |       |        |
| Values 1 and 2   | 23    | 12      | 16  | 19    | 17     |
| Value 3  | 28    | 22      | 14  | 38    | 25     |
| Values 4 and 5   | 49    | 66      | 70  | 43    | 58     |
| Arithmetic mean  | 3.3   | 3.7     | 3.9 | 3.3   | 3.6    |

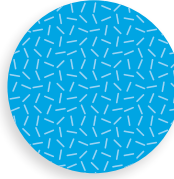
Question F3A: If you consider all dimensions of your employment and work (status, position, income, work tasks, etc.) to what extent is your employment and work appropriate to your level of education? Scale of answers from 1 = 'Not at all appropriate' to 5 = 'Completely appropriate'.

**Table 35 Most appropriate level of course of study/degree, by country (%)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Most appropriate level of course of study/degree</b> |       |         |     |       |        |
| A higher level than the one I graduated from            | 9     | 6       | 19  | 14    | 11     |
| The same level  | 59    | 68      | 58  | 51    | 60     |
| A lower level of higher/tertiary education              | 13    | 18      | 18  | 18    | 17     |
| No higher/tertiary education at all                     | 16    | 6       | 4   | 11    | 9      |
| Other   | 3     | 2       | 1   | 6     | 3      |
| Total   | 100   | 100     | 100 | 100   | 100    |
| Count   | 253   | 355     | 267 | 280   | 1 155  |

Question F3B: What is the most appropriate level of course of study/degree for your employment and work in comparison to that which you graduated from in 1994 or 1995?





**Table 36 Reasons for taking a job not closely linked to study, by country (%; multiple responses)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>Reasons for taking a job not greatly linked to study</b>                                   |       |         |     |       |        |
| I have not (yet) been able to find a job more appropriate                                     | 31    | 17      | 37  | 22    | 25     |
| In doing this job I have better career prospects  | 11    | 17      | 33  | 15    | 17     |
| I prefer an occupation which is not closely connected to my studies                           | 5     | 5       | 16  | 11    | 8      |
| I was promoted to a position less linked to my studies than my previous position(s)           | 0     | 0       | 2   | 6     |        |
| 0   | 2     |         |     |       |        |
| I can get a higher income in my current job   | 4     | 9       | 33  | 12    | 11     |
| My current job offers me more security  | 11    | 10      | 20  | 36    | 18     |
| My current job is more interesting  | 9     | 19      | 29  | 29    | 20     |
| My current job provides the opportunity for part-time/flexible schedules etc.                 | 12    | 14      | 15  | 13    | 7      |
| My current job enables me to work in a locality which I prefer                                | 6     | 18      | 27  | 27    | 18     |
| My current job allows me to take into account family needs                                    | 12    | 9       | 10  | 10    | 10     |
| At the beginning of the career envisaged I have to accept work not closely linked to my study | 10    | 8       | 8   | 9     |        |
| 10  | 4     | 8       |     |       |        |
| Other   | 4     | 5       | 16  | 15    | 8      |
| Not applicable, I consider my job closely linked to my studies                                | 46    | 49      | 0   | 13    | 33     |
| Total   | 160   | 184     | 250 | 200   | 190    |
| Count   | 227   | 288     | 105 | 208   | 828    |

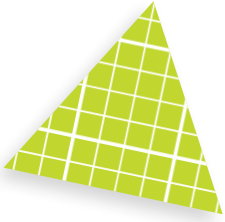
Question F4: If you consider your employment and work as not particularly appropriate and not linked to your education: why did you take it up? Multiple reply possible.

## G. Work orientations and job satisfaction

**Table 37 General satisfaction with current work, by country (%; arithmetic mean)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| <b>General satisfaction with current work</b> |       |         |     |       |        |
| 1 Very dissatisfied                           | 5     | 3       | 3   | 6     | 4      |
| 2   | 15    | 9       | 15  | 20    | 15     |
| 3   | 33    | 24      | 25  | 24    | 26     |
| 4   | 38    | 45      | 37  | 41    | 41     |
| 5 Very satisfied                              | 10    | 19      | 21  | 8     | 15     |
| Total   | 100   | 100     | 100 | 100   | 100    |
| Count   | 258   | 371     | 272 | 290   | 1 191  |
| <b>Recorded values</b>                        |       |         |     |       |        |
| Values 1 and 2                                | 20    | 12      | 18  | 26    | 18     |
| Value 3                                       | 33    | 24      | 25  | 24    | 26     |
| Values 4 and 5                                | 48    | 64      | 57  | 49    | 55     |
| Arithmetic mean                               | 3.3   | 3.7     | 3.6 | 3.3   | 3.5    |

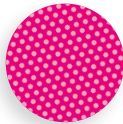
Question G1: Altogether, to what extent are you satisfied with your current work? Scale of answers from 1 = 'Very dissatisfied' to 5 = 'Very satisfied'.



**Table 38 Work orientations, by country (arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 4.2   | 4.2     | 3.5 | 3.8   | 3.9    |
| Opportunity of undertaking scientific/scholarly work   | 3.2   | 2.8     | 2.8 | 3.4   | 3.1    |
| Clear and well-ordered tasks                           | 3.8   | 3.1     | 3.5 | 3.6   | 3.5    |
| Possibilities of using acquired knowledge and skills   | 4.2   | 3.8     | 4.4 | 4.2   | 4.1    |
| Job security   | 4.0   | 4.1     | 4.1 | 3.8   | 4.0    |
| Social recognition and status                          | 3.1   | 3.1     | 3.1 | 3.1   | 3.1    |
| Opportunity of pursuing own ideas                      | 4.3   | 4.1     | 3.9 | 4.1   | 4.1    |
| Good social climate                                    | 4.4   | 4.5     | 4.2 | 4.4   | 4.4    |
| Opportunity of pursuing continuous learning            | 4.4   | 4.1     | 3.7 | 3.9   | 4.1    |
| High income  | 3.5   | 3.6     | 3.7 | 3.6   | 3.6    |
| Chances of (political) influence                       | 3.4   | 2.4     | 2.2 | 3.0   | 2.7    |
| Challenging tasks                                      | 4.1   | 4.0     | 4.2 | 3.8   | 4.0    |
| Good career prospects                                  | 3.8   | 3.6     | 4.2 | 3.5   | 3.7    |
| Enough time for leisure activities                     | 4.0   | 3.8     | 4.3 | 4.2   | 4.0    |
| Coordinating and management tasks                      | 3.4   | 3.5     | 3.5 | 3.0   | 3.4    |
| Possibility of working in a team                       | 3.4   | 3.9     | 3.7 | 3.3   | 3.6    |
| Chance of doing something useful for society           | 3.9   | 3.1     | 3.5 | 3.8   | 3.5    |
| Variety  | 3.9   | 4.1     | 4.3 | 4.3   | 4.1    |
| Good chances of combining employment with family tasks | 4.2   | 3.4     | 3.5 | 3.8   | 3.7    |
| Count  | 304   | 389     | 304 | 327   | 1 324  |

Question G3A: How important are the following characteristics of an occupation for you personally? Scale of answers from 1 = 'Not at all important' to 5 = 'Very important'.





**Table 39 Work orientations, by country (%; responses 1 and 2)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 4     | 2       | 13  | 5     | 6      |
| Opportunity of undertaking scientific/scholarly work   | 30    | 45      | 43  | 19    | 35     |
| Clear and well-ordered tasks                           | 12    | 26      | 14  | 13    | 17     |
| Possibilities of using acquired knowledge and skills   | 4     | 8       | 3   | 4     | 5      |
| Job security   | 7     | 7       | 6   | 8     | 7      |
| Social recognition and status                          | 27    | 25      | 31  | 28    | 28     |
| Opportunity of pursuing own ideas                      | 3     | 3       | 8   | 4     | 4      |
| Good social climate                                    | 2     | 1       | 3   | 2     | 2      |
| Opportunity of pursuing continuous learning            | 3     | 5       | 16  | 7     | 8      |
| High income  | 12    | 12      | 13  | 12    | 12     |
| Chances of (political) influence                       | 18    | 57      | 61  | 26    | 41     |
| Challenging tasks                                      | 4     | 4       | 2   | 6     | 4      |
| Good career prospects                                  | 13    | 12      | 3   | 16    | 11     |
| Enough time for leisure activities                     | 6     | 8       | 2   | 4     | 5      |
| Coordinating and management tasks                      | 22    | 14      | 19  | 23    | 19     |
| Possibility of working in a team                       | 19    | 4       | 10  | 16    | 12     |
| Chance of doing something useful for society           | 11    | 29      | 23  | 8     | 18     |
| Variety  | 10    | 2       | 2   | 2     | 4      |
| Good chances of combining employment with family tasks | 6     | 23      | 22  | 9     | 15     |
| Count  | 304   | 389     | 304 | 327   | 1 324  |

Question G3A: How important are the following characteristics of an occupation for you personally? Scale of answers from 1 = 'Not at all important' to 5 = 'Very important'.



**Table 40 Work orientations, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 82    | 84      | 53  | 69    | 73     |
| Opportunity of undertaking scientific/scholarly work   | 44    | 33      | 32  | 50    | 40     |
| Clear and well-ordered tasks                           | 63    | 41      | 51  | 57    | 52     |
| Possibilities of using acquired knowledge and skills   | 80    | 68      | 90  | 83    | 80     |
| Job security   | 69    | 78      | 77  | 70    | 74     |
| Social recognition and status                          | 37    | 39      | 38  | 33    | 37     |
| Opportunity of pursuing own ideas                      | 85    | 80      | 71  | 83    | 80     |
| Good social climate                                    | 88    | 93      | 81  | 90    | 88     |
| Opportunity of pursuing continuous learning            | 87    | 83      | 63  | 72    | 77     |
| High income  | 52    | 56      | 57  | 62    | 57     |
| Chances of (political) influence                       | 49    | 15      | 16  | 27    | 26     |
| Challenging tasks                                      | 80    | 76      | 83  | 66    | 76     |
| Good career prospects                                  | 64    | 57      | 83  | 52    | 63     |
| Enough time for leisure activities                     | 71    | 69      | 84  | 79    | 75     |
| Coordinating and management tasks                      | 48    | 55      | 53  | 26    | 46     |
| Possibility of working in a team                       | 50    | 72      | 62  | 40    | 57     |
| Chance of doing something useful for society           | 66    | 37      | 50  | 64    | 54     |
| Variety  | 68    | 81      | 86  | 87    | 80     |
| Good chances of combining employment with family tasks | 78    | 53      | 56  | 66    | 63     |
| Count  | 304   | 389     | 304 | 327   | 1 324  |

Question G3A: How important are the following characteristics of an occupation for you personally? Scale of answers from 1 = 'Not at all important' to 5 = 'Very important'.



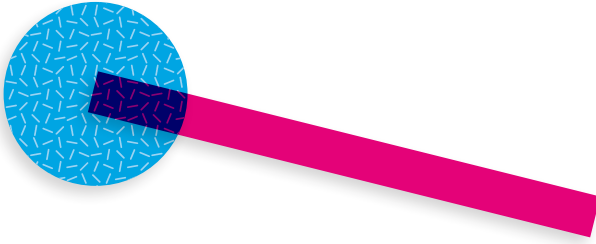
**Table 41 Professional situation, by country (arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 3.5   | 4.1     | 3.5 | 3.5   | 3.7    |
| Opportunity of undertaking scientific/scholarly work   | 2.3   | 2.4     | 2.2 | 2.9   | 2.5    |
| Clear and well-ordered tasks                           | 3.3   | 3.0     | 3.4 | 3.2   | 3.2    |
| Possibilities of using acquired knowledge and skills   | 3.6   | 3.4     | 3.9 | 3.3   | 3.5    |
| Job security   | 3.3   | 3.6     | 3.7 | 3.6   | 3.5    |
| Social recognition and status                          | 2.9   | 3.4     | 3.0 | 3.2   | 3.1    |
| Opportunity of pursuing own ideas                      | 3.3   | 3.7     | 3.3 | 3.3   | 3.4    |
| Good social climate                                    | 3.8   | 3.9     | 3.8 | 3.6   | 3.8    |
| Opportunity of pursuing continuous learning            | 3.6   | 3.4     | 3.2 | 3.2   | 3.3    |
| High income  | 2.5   | 2.9     | 2.9 | 2.9   | 2.8    |
| Chances of (political) influence                       | 2.8   | 2.0     | 2.2 | 2.9   | 2.4    |
| Challenging tasks                                      | 3.4   | 4.0     | 3.9 | 3.2   | 3.7    |
| Good career prospects                                  | 2.8   | 2.7     | 3.5 | 2.9   | 3.0    |
| Enough time for leisure activities                     | 3.0   | 3.1     | 3.4 | 3.1   | 3.1    |
| Coordinating and management tasks                      | 2.9   | 3.2     | 3.2 | 2.9   | 3.1    |
| Possibility of working in a team                       | 3.1   | 3.8     | 3.9 | 3.6   | 3.6    |
| Chance of doing something useful for society           | 2.8   | 2.7     | 2.9 | 3.4   | 2.9    |
| Variety  | 3.2   | 3.9     | 3.7 | 3.5   | 3.6    |
| Good chances of combining employment with family tasks | 3.3   | 2.8     | 3.0 | 3.0   | 3.0    |
| Count  | 254   | 354     | 268 | 280   | 1 156  |

Question G3B: To what extent do the following characteristics of an occupation apply to your current professional situation? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.







**Table 42 Professional situation, by country (%; responses 1 and 2)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 18    | 6       | 17  | 14    | 13     |
| Opportunity of undertaking scientific/scholarly work   | 62    | 63      | 63  | 36    | 56     |
| Clear and well-ordered tasks                           | 21    | 35      | 19  | 21    | 25     |
| Possibilities of using acquired knowledge and skills   | 17    | 21      | 13  | 24    | 19     |
| Job security   | 31    | 20      | 19  | 19    | 22     |
| Social recognition and status                          | 36    | 13      | 37  | 24    | 26     |
| Opportunity of pursuing own ideas                      | 25    | 15      | 23  | 25    | 21     |
| Good social climate                                    | 12    | 8       | 13  | 16    | 12     |
| Opportunity of pursuing continuous learning            | 17    | 24      | 31  | 29    | 25     |
| High income  | 50    | 31      | 36  | 39    | 38     |
| Chances of (political) influence                       | 36    | 70      | 61  | 28    | 50     |
| Challenging tasks                                      | 20    | 5       | 11  | 26    | 15     |
| Good career prospects                                  | 42    | 44      | 18  | 30    | 34     |
| Enough time for leisure activities                     | 38    | 33      | 26  | 37    | 33     |
| Coordinating and management tasks                      | 41    | 26      | 30  | 25    | 30     |
| Possibility of working in a team                       | 32    | 9       | 12  | 11    | 15     |
| Chance of doing something useful for society           | 43    | 45      | 42  | 16    | 37     |
| Variety  | 26    | 9       | 15  | 19    | 16     |
| Good chances of combining employment with family tasks | 26    | 43      | 34  | 28    | 34     |
| Count  | 254   | 354     | 268 | 280   | 1 156  |

Question G3B: To what extent do the following characteristics of an occupation apply to your current professional situation? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.



**Table 43 Professional situation, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| Largely independent disposition of work                | 56    | 77      | 53  | 50    | 60     |
| Opportunity of undertaking scientific/scholarly work   | 23    | 24      | 19  | 30    | 24     |
| Clear and well-ordered tasks                           | 45    | 33      | 49  | 36    | 40     |
| Possibilities of using acquired knowledge and skills   | 60    | 47      | 65  | 47    | 54     |
| Job security   | 49    | 58      | 62  | 58    | 57     |
| Social recognition and status                          | 30    | 48      | 34  | 39    | 39     |
| Opportunity of pursuing own ideas                      | 46    | 61      | 45  | 45    | 50     |
| Good social climate                                    | 66    | 70      | 65  | 59    | 65     |
| Opportunity of pursuing continuous learning            | 59    | 49      | 41  | 42    | 48     |
| High income  | 18    | 31      | 32  | 32    | 29     |
| Chances of (political) influence                       | 28    | 10      | 15  | 23    | 18     |
| Challenging tasks                                      | 52    | 75      | 69  | 41    | 60     |
| Good career prospects                                  | 31    | 24      | 53  | 27    | 33     |
| Enough time for leisure activities                     | 38    | 36      | 49  | 47    | 42     |
| Coordinating and management tasks                      | 32    | 42      | 43  | 19    | 34     |
| Possibility of working in a team                       | 40    | 67      | 68  | 58    | 59     |
| Chance of doing something useful for society           | 29    | 27      | 35  | 46    | 34     |
| Variety  | 40    | 69      | 62  | 55    | 58     |
| Good chances of combining employment with family tasks | 42    | 32      | 36  | 27    | 34     |
| Count  | 254   | 354     | 268 | 280   | 1 156  |

Question G3B: To what extent do the following characteristics of an occupation apply to your current professional situation? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

## H. Socio-biographic data

**Table 44 Gender, by country (%)**

|               | Italy | Germany | UK  | Japan | #Total |
|---------------|-------|---------|-----|-------|--------|
| <b>Gender</b> |       |         |     |       |        |
| Male          | 50    | 70      | 43  | 48    | 54     |
| Female        | 50    | 30      | 57  | 52    | 46     |
| Total         | 100   | 100     | 100 | 100   | 100    |
| Count         | 309   | 391     | 316 | 330   | 1 346  |

Question G1: Gender





**Table 45 Year of birth, by country (means)**

|                      | Italy | Germany | UK  | Japan | #Total |
|----------------------|-------|---------|-----|-------|--------|
| <b>Year of birth</b> |       |         |     |       |        |
| Arithm. mean         | 67    | 67      | 68  | 72    | 69     |
| Median               | 68    | 68      | 72  | 72    | 70     |
| Standardabw.         | 3     | 3       | 10  | 1     | 5      |
| Minimum              | 47    | 43      | 24  | 54    | 24     |
| Maximum              | 72    | 72      | 74  | 73    | 74     |
| Count                | 307   | 390     | 313 | 324   | 1 324  |

Question G2: Year of birth

**Table 46 Kind of residence immediately prior to graduation, by country (%; multiple responses)**

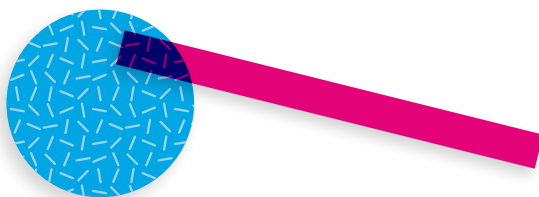
|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| <b>Kind of residence immediately prior to graduation</b> |       |         |     |       |        |
| with a partner   | 11    | 39      | 22  | 1     | 19     |
| with parents   | 76    | 28      | 31  | 42    | 43     |
| with other persons                                       | 12    | 12      | 50  | 5     | 19     |
| as single  | 5     | 25      | 7   | 52    | 23     |
| Total  | 103   | 104     | 109 | 101   | 104    |
| Count  | 306   | 385     | 305 | 328   | 1 324  |

Question G6A: Where did you live prior to graduation? Multiple reply possible.

**Table 47 Kind of current residence, by country (%; multiple responses)**

|                                  | Italy | Germany | UK  | Japan | #Total |
|----------------------------------|-------|---------|-----|-------|--------|
| <b>Kind of current residence</b> |       |         |     |       |        |
| with a partner                   | 41    | 60      | 41  | 21    | 41     |
| with parents                     | 47    | 8       | 15  | 46    | 28     |
| with other persons               | 4     | 6       | 29  | 8     | 11     |
| as single                        | 9     | 29      | 19  | 30    | 22     |
| Total                            | 101   | 103     | 103 | 105   | 103    |
| Count                            | 306   | 382     | 308 | 328   | 1 324  |

Question G6B: Where do you live currently? Multiple reply possible.



## I. Retrospective assessment of study

**Table 48 Utility of study viewed retrospectively, by country (arithmetic mean)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| For finding a satisfying job after finishing your studies | 2.8   | 3.9     | 3.3 | 3.3   | 3.4    |
| For your long-term career prospects                       | 2.9   | 3.7     | 3.8 | 3.4   | 3.5    |
| For the development of your personality                   | 3.7   | 4.0     | 4.2 | 3.9   | 4.0    |
| Count   | 292   | 391     | 309 | 327   | 1 319  |

Question I1: To what extent did your studies help you...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 49 Utility of study viewed retrospectively, by country (%; responses 1 and 2)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| For finding a satisfying job after finishing your studies | 41    | 11      | 31  | 25    | 26     |
| For your long-term career prospects                       | 37    | 14      | 13  | 20    | 21     |
| For the development of your personality                   | 14    | 5       | 4   | 9     | 8      |
| Count   | 292   | 391     | 309 | 327   | 1 319  |

Question I1: To what extent did your studies help you...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 50 Utility of study viewed retrospectively, by country (%; responses 4 and 5)**

|   | Italy | Germany | UK  | Japan | #Total |
|---|-------|---------|-----|-------|--------|
| For finding a satisfying job after finishing your studies | 37    | 68      | 51  | 48    | 52     |
| For your long-term career prospects                       | 40    | 61      | 63  | 49    | 54     |
| For the development of your personality                   | 63    | 79      | 80  | 69    | 73     |
| Count   | 292   | 391     | 309 | 327   | 1 319  |

Question I1: To what extent did your studies help you...? Scale of answers from 1 = 'Not at all' to 5 = 'To a very high extent'.

**Table 51 Satisfaction with course of study, by country (arithmetic mean)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| choose the same course of study                  | 3.6   | 3.8     | 3.8 | 3.4   | 3.6    |
| choose the same institution of higher education  | 3.5   | 3.8     | 3.9 | 3.1   | 3.6    |
| choose a higher degree level of higher education | 3.1   | 2.0     | 3.0 | -     | 2.7    |
| choose a lower degree level of higher education  | 1.7   | 1.4     | 1.2 | 2.1   | 1.6    |
| decide not to study at all                       | 1.4   | 1.4     | 1.2 | 1.5   | 1.4    |
| Count  | 293   | 390     | 309 | 326   | 1 318  |

Question I2: Looking back, if you were free to choose again, how likely would you... Scale of answers from 1 = 'Not likely at all' to 5 = 'Very likely'.



**Table 52 Satisfaction with course of study, by country (%; responses 1 and 2)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| choose the same course of study                  | 23    | 19      | 22  | 25    | 22     |
| choose the same institution of higher education  | 25    | 16      | 14  | 29    | 21     |
| choose a higher degree level of higher education | 34    | 67      | 39  | 0     | 49     |
| choose a lower degree level of higher education  | 82    | 87      | 94  | 67    | 83     |
| decide not to study at all                       | 89    | 87      | 94  | 85    | 89     |
| Count  | 293   | 390     | 309 | 326   | 1 318  |

Question I2: Looking back, if you were free to choose again, how likely would you... Scale of answers from 1 = 'Not likely at all' to 5 = 'Very likely'.

**Table 53 Satisfaction with course of study, by country (%; responses 4 and 5)**

|  | Italy | Germany | UK  | Japan | #Total |
|--|-------|---------|-----|-------|--------|
| choose the same course of study                  | 59    | 67      | 65  | 47    | 60     |
| choose the same institution of higher education  | 57    | 64      | 70  | 34    | 56     |
| choose a higher degree level of higher education | 43    | 16      | 44  | 0     | 33     |
| choose a lower degree level of higher education  | 10    | 2       | 3   | 20    | 8      |
| decide not to study at all                       | 6     | 7       | 4   | 4     | 5      |
| Count  | 293   | 390     | 309 | 326   | 1 318  |

Question I2: Looking back, if you were free to choose again, how likely would you... Scale of answers from 1 = 'Not likely at all' to 5 = 'Very likely'.





## Appendix 1: The tracer study 2000 questionnaire

Selections of the Cheers questionnaire

Number of questions: 37

Number of variables: 223

Higher education and  
Graduate employment in Europe

Survey of graduates of the year 1995

Extract from the international master questionnaire

Some questions were adapted and in some cases of open questions only the coded answers on a high level of aggregation are included here (like B1, C10D).

|          |  |           |
|----------|--|-----------|
| <b>A</b> | <b>Educational Background Prior to Study</b> | <b>S8</b> |
|----------|--|-----------|

*No questions selected from this part of the CHEERS questionnaire.*

|          |                          |           |
|----------|--------------------------|-----------|
| <b>B</b> | <b>Course of Studies</b> | <b>S8</b> |
|----------|--------------------------|-----------|

|           |   |            |
|-----------|---|------------|
| <b>B1</b> | <b>Please, provide information about all higher education courses you have ever taken - major(s) studied?</b> | <b>Q68</b> |
|-----------|---|------------|

|   |                          |             |
|---|--------------------------|-------------|
| 1 | <input type="checkbox"/> | Humanities  |
| 2 | <input type="checkbox"/> | Sciences    |
| 3 | <input type="checkbox"/> | Engineering |

|           |  |            |
|-----------|--|------------|
| <b>B2</b> | <b>Did you spend time abroad during the time of your study ?</b> | <b>Q68</b> |
|-----------|--|------------|

|   |                          |     |
|---|--------------------------|-----|
| 1 | <input type="checkbox"/> | No  |
| 2 | <input type="checkbox"/> | Yes |



B8

If you look back to your course of study that you graduated from in 1994 or 1995: to what extent were the following modes of teaching and learning emphasised by your institution of higher education and its teachers?

B8

|   | Not at all               |                          |                          |                          |                          |  | To a very high extent    |                          |                          |                          |                          |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Facts and instrumental knowledge   |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Theories, concepts or paradigms  |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Attitudes and socio-communicative skills                                   |
| 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Independent learning   |
| 5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Regular class attendance   |
| 6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teacher as the main source of information and understanding                |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Freedom to choose courses and areas of specialisation                      |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Project and problem-based learning   |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Direct acquisition of work experience                                      |
| 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Out-of-class communication between students and staff                      |
| 5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Writing a thesis [NatCat; Thesis or other substantial academic assignment] |
| 6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Detailed regular assessment of academic progress                           |





| <b>B9</b> How do you rate the study provision and study conditions you experienced in the course of study that you graduated from in 1994 or 1995? <b>B9</b> |                          |                          |                          |                          |                          |   |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
|  | Very bad                 |                          |                          | Very good                |                          |   |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Academic advice offered in general                                    |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assistance/advice for your final examination                          |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Course content of major   |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Variety of courses offered  |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Design of degree program  |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Testing/grading system  |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity to choose courses and areas of specialisation             |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Practical emphasis of teaching and learning                           |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Teaching quality  |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chances to participate in research projects                           |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Research emphasis of teaching and learning                            |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Provision of work placements and other work experience                |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of out-of-class contacts with teaching staff              |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Contacts with fellow students   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chance for students to have an impact on university policies          |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Equipment and stocking of libraries                                   |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Supply of teaching material   |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quality of technical equipment (e.g. PC, measuring instruments, etc.) |

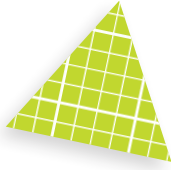
**C Job Search and Sequence of Professional Activities S8**

**C1 Did you ever seek a job since graduation 1994 or 1995? C1**

|   |                          |   |
|---|--------------------------|---|
| 1 | <input type="checkbox"/> | Yes → Please go to question C2  |
| 2 | <input type="checkbox"/> | No, I set up my own business/self-employment                              |
| 3 | <input type="checkbox"/> | No, I continued the job I had before graduation                           |
| 4 | <input type="checkbox"/> | No, I continued to study  |
| 5 | <input type="checkbox"/> | No, I obtained work without actually searching → Please go to question C8 |
| 6 | <input type="checkbox"/> | Other (please specify):   |

→ If you have not sought a Job Please go to question C9





| <b>C2 When did you start looking for a job?</b> |  | <b>C2</b> |
|---|--|-----------|
| 1   | <input type="checkbox"/> Prior to graduation           |           |
| 2   | <input type="checkbox"/> Around the time of graduation |           |
| 3   | <input type="checkbox"/> After graduation              |           |

| <b>C4 If you are currently employed/self-employed: how would you describe your current professional situation? Multiple reply possible</b> |  | <b>C4</b> |
|--|--|-----------|
| 1  | <input type="checkbox"/> 1. I applied for an advertised vacancy  |           |
| 2  | <input type="checkbox"/> 2. I contacted employers without knowing about a vacancy  |           |
| 3  | <input type="checkbox"/> 3. I launched advertisements by myself  |           |
| 4  | <input type="checkbox"/> 4. I was approached by an employer  |           |
| 5  | <input type="checkbox"/> 5. I contacted a public employment agency [NatCat]  |           |
| 6  | <input type="checkbox"/> 6. I contacted a commercial employment agency   |           |
| 7  | <input type="checkbox"/> 7. I enlisted the help of the careers/placement office [NatCat] of my institution of higher education |           |
| 8  | <input type="checkbox"/> 8. I enlisted the help of teaching staff of the institution of higher education                       |           |
| 9  | <input type="checkbox"/> 9. I established contacts while working during the course of study                                    |           |
| 10   | <input type="checkbox"/> 10. I used other personal connections/contacts (e.g. parents, relatives, friends)                     |           |
| 11   | <input type="checkbox"/> 11. I started my own business/self-employment   |           |
| 12   | <input type="checkbox"/> 12. Other (please specify):   |           |

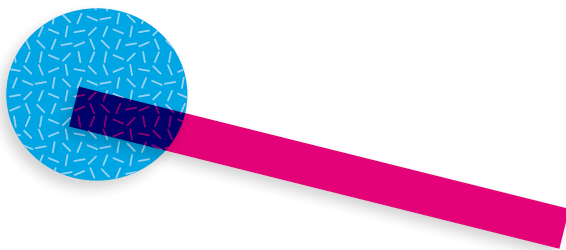
| <b>C5 Which method was the most important for getting your <u>first job</u> after graduation in 1994 or 1995?</b> |   | <b>C5</b> |
|---|---|-----------|
| 1   | <input type="checkbox"/> <input type="checkbox"/> Most important method | <b>C6</b> |

| <b>C6 How many employers did you contact before you took up your <u>first job</u> after graduation in 1994 or 1995?</b> |  | <b>C6</b> |
|---|--|-----------|
| 1   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Number of employers contacted |           |

| <b>C7 How many months have you sought all together for your <u>first job</u> after graduation in 1994 or 1995, which you consider not to be a casual job?</b> |  | <b>C7</b> |
|---|--|-----------|
| 1   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Number of months of job seeking |           |



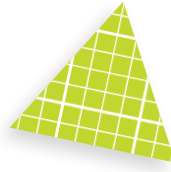
| <b>C10A Kind of current major activity?</b> |   | <b>C10A</b> |
|---|---|-------------|
| 1   | <input type="checkbox"/> Employed                         |             |
| 2   | <input type="checkbox"/> Self-employed                    |             |
| 3   | <input type="checkbox"/> Not employed, seeking employment |             |
| 4   | <input type="checkbox"/> Professional training            |             |
| 5   | <input type="checkbox"/> Advanced academic study          |             |
| 6   | <input type="checkbox"/> Child rearing, family care       |             |
| 7   | <input type="checkbox"/> Other (please specify):          |             |

| <b>C10B Full-time or part-time?</b> |                                    | <b>C10B</b> |
|-------------------------------------|------------------------------------|-------------|
| 1                                   | <input type="checkbox"/> Full-time |             |
| 2                                   | <input type="checkbox"/> Part-time |             |

| <b>C10C Type of contract?</b> |                                    | <b>C10C</b> |
|-------------------------------|------------------------------------|-------------|
| 1                             | <input type="checkbox"/> Permanent |             |
| 2                             | <input type="checkbox"/> Temporary |             |

| <b>C10D What is your job title?</b> |  | <b>C10D</b> |
|-------------------------------------|--|-------------|
| 1                                   | <input type="checkbox"/> Senior managers       |             |
| 2                                   | <input type="checkbox"/> Professionals         |             |
| 3                                   | <input type="checkbox"/> Technicians           |             |
| 4                                   | <input type="checkbox"/> Clerks                |             |
| 5                                   | <input type="checkbox"/> Service workers       |             |
| 6                                   | <input type="checkbox"/> Skilled agriculture   |             |
| 7                                   | <input type="checkbox"/> Craft and related     |             |
| 8                                   | <input type="checkbox"/> Plant and machine     |             |
| 9                                   | <input type="checkbox"/> Elementary occupation |             |





**D Employment and Work S8**

**D1 If you are currently employed/self-employed: how would you describe your current professional situation? Multiple reply possible D1**

- 1  I have regular employment/I am self-employed
- 2  I have casual jobs related to my study
- 3  I have casual jobs not related to my study
- 4  I have more than one job
- 5  I am currently doing military or civilian service
- 6  Other (please specify):

**D4 Please state the kind of your current employer/institution (if several, please refer to main employer)? D4**

- 1  Public employer
- 2  Non-profit organization
- 3  Private employer
- 4  Self-employed
- 5  Other (please specify):

**D5 In which economic sector are you currently working? Q71**

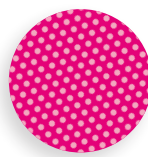
- 1

**D9 Please estimate, to the best of your ability, the approximate number of people who are working in... D9**

- 1  the location where you currently work.
- 2  the entire organisation if there is more than one location.

**D11 What is your approximate annual gross income? (in thousand) D9**

- 1  a. from your current major job (*excluding overtime and extra payments*)?
- 2  b. from overtime and extra payments in your major job?
- 3  c. from other jobs?



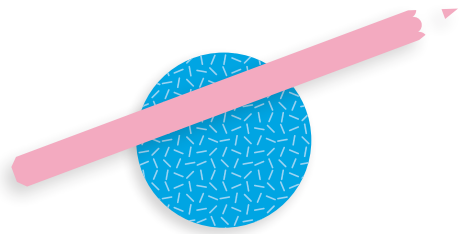
**E Acquired Competencies and Work Requirements S8**

**E1A Please, state the extent to which you had the following competencies at the time of graduation in 1994 or 1995 and to what extent they are required in your current work. E1A**

|    | Not at all               |                          |                          |                          |                          |  | To a very high extent    |                          |                          |                          |                          |
|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|    | 1                        | 2                        | 3                        | 4                        | 5                        |  | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Broad general knowledge  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Cross-disciplinary thinking/knowledge                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Field-specific theoretical knowledge                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Field-specific knowledge of methods                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Foreign language proficiency                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Computer skills  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Understanding complex social, organisational and technical systems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Planning, coordinating and organising                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Applying rules and regulations                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Economic reasoning   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Documenting ideas and information                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Problem-solving ability  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analytical competencies  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Learning abilities   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Reflective thinking, assessing one's own work                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Creativity   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working under pressure   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Accuracy, attention to detail                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Time management  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Negotiating  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Fitness for work   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Manual skills  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working independently  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working in a team  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Initiative   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Adaptability   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assertiveness, decisiveness, persistence                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Power of concentration   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Getting personally involved  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Loyalty, integrity   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Critical thinking  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Oral communication skills  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Written communication skills                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tolerance, appreciating of different points of view                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Leadership   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Taking responsibilities, decisions                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



| E1B |                          | Please, state the extent to which the following competencies are required in your current work. |                          |                          |                          |                          | E1B  |
|-----|--------------------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--|
|     |                          | Not at all  |                          | To a very high extent    |                          |                          |  |
|     |                          | 1   | 2                        | 3                        | 4                        | 5                        |  |
| 1   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Broad general knowledge  |
| 2   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Cross-disciplinary thinking/knowledge                              |
| 3   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Field-specific theoretical knowledge                               |
| 4   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Field-specific knowledge of methods                                |
| 5   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Foreign language proficiency                                       |
| 6   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Computer skills  |
| 7   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Understanding complex social, organisational and technical systems |
| 8   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Planning, coordinating and organising                              |
| 9   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Applying rules and regulations                                     |
| 10  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Economic reasoning   |
| 11  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Documenting ideas and information                                  |
| 12  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Problem-solving ability  |
| 13  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analytical competencies  |
| 14  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Learning abilities   |
| 15  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Reflective thinking, assessing one's own work                      |
| 16  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Creativity   |
| 17  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working under pressure   |
| 18  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Accuracy, attention to detail                                      |
| 19  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Time management  |
| 20  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Negotiating  |
| 21  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Fitness for work   |
| 22  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Manual skills  |
| 23  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working independently  |
| 24  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Working in a team  |
| 25  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Initiative   |
| 26  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Adaptability   |
| 27  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Assertiveness, decisiveness, persistence                           |
| 28  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Power of concentration   |
| 29  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Getting personally involved  |
| 30  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Loyalty, integrity   |
| 31  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Critical thinking  |
| 32  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Oral communication skills  |
| 33  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Written communication skills                                       |
| 34  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tolerance, appreciating of different points of view                |
| 35  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Leadership   |
| 36  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Taking responsibilities, decisions                                 |



| E2 To what extent has your study been useful for...? |                          |                          |                          |                          |                          | E2  |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Not at all   |                          | To a very high extent    |                          |                          |                          |   |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |   |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | preparing you for your present work tasks?        |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | preparing you for tasks in other spheres of life? |

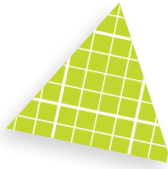
**F Relationship between Higher Education and work** **S8**

| F1 If you take into consideration your current work tasks altogether: To what extent do you use the knowledge and skills acquired in the course of study ? |                          |                          |                          |                          |                          | Q56 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----|
| Not at all   |                          | To a very high extent    |                          |                          |                          |     |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |     |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |     |

| F2 How would you characterise the relationship between your field of study and your area of work? |   | Q57 |
|---|---|-----|
| 1   | <input type="checkbox"/> My field of study is the only possible/by far the best field       |     |
| 2   | <input type="checkbox"/> Some other fields could prepare for the area of work as well       |     |
| 3   | <input type="checkbox"/> Another field would have been more useful                          |     |
| 3   | <input type="checkbox"/> The field of study does not matter very much                       |     |
| 4   | <input type="checkbox"/> Higher education studies are not at all related to my area of work |     |
| 4   | <input type="checkbox"/> Other (please specify):  |     |

| F3A If you consider all dimensions of your employment and work (status, position, income, work tasks, etc.): To what extent is your employment and work appropriate to your level of education? |                          |                          |                          |                          |                          | F3A |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----|
| Not at all appropriate  |                          | Completely appropriate   |                          |                          |                          |     |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |     |
| 1   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |     |





| F3B | What is the most appropriate level of course of study/degree for your employment and work in comparison to that which you graduated from? | F3B |
|-----|---|-----|
|-----|---|-----|

|   |                          |  |     |
|---|--------------------------|--|-----|
| 1 | <input type="checkbox"/> | A higher level than the one I graduated from | F3B |
| 2 | <input type="checkbox"/> | The same level                               |     |
| 3 | <input type="checkbox"/> | A lower level of higher/tertiary education   |     |
| 4 | <input type="checkbox"/> | No higher/tertiary education at all          |     |
| 4 | <input type="checkbox"/> | Others (please specify):                     |     |

| F4 | If you consider your employment and work as not particularly appropriate and not linked to your education: why did you take it up? Multiple reply possible | F4 |
|----|--|----|
|----|--|----|

|    |                          |   |  |
|----|--------------------------|---|--|
| 1  | <input type="checkbox"/> | I have not (yet) been able to find a job more appropriate                                     |  |
| 2  | <input type="checkbox"/> | In doing this job I have better career prospects  |  |
| 3  | <input type="checkbox"/> | I prefer an occupation which is not closely connected to my studies                           |  |
| 4  | <input type="checkbox"/> | I was promoted to a position less linked to my studies than my previous position(s)           |  |
| 5  | <input type="checkbox"/> | I can get a higher income in my current job   |  |
| 6  | <input type="checkbox"/> | My current job offers me more security  |  |
| 7  | <input type="checkbox"/> | My current job is more interesting  |  |
| 8  | <input type="checkbox"/> | My current job provides the opportunity for part-time/flexible schedules etc.                 |  |
| 9  | <input type="checkbox"/> | My current job enables me to work in a locality which I prefer                                |  |
| 10 | <input type="checkbox"/> | My current job allows me to take into account family needs                                    |  |
| 11 | <input type="checkbox"/> | At the beginning of the career envisaged I have to accept work not closely linked to my study |  |
| 12 | <input type="checkbox"/> | Other (please specify):   |  |
| 13 | <input type="checkbox"/> | Not applicable, I consider my job closely linked to my studies                                |  |

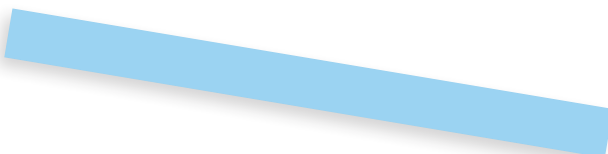
| G | Work Orientations and Job Satisfaction | S1 |
|---|--|----|
|---|--|----|

| G1 | Altogether, to what extent are you satisfied with your current work? | Q65 |
|----|--|-----|
|----|--|-----|

|   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | Very<br>dissatisfied     |                          |                          |                          | Very<br>satisfied        |
|   | 1                        | 2                        | 3                        | 4                        | 5                        |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



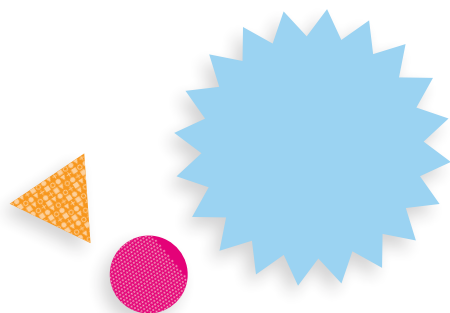
| G3A |                          | How important are the following characteristics of an occupation for you personally (G3A) and to what extent do they apply to your current professional situation (G3B)? |                          |                          |                          |                          | G3A  |
|-----|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--|
|     |                          | Not at all important   |                          |                          | Very important           |                          |  |
|     |                          | 1  | 2                        | 3                        | 4                        | 5                        |  |
| 1   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Largely independent disposition of work                |
| 2   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of undertaking scientific/scholarly work   |
| 3   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear and well-ordered tasks                           |
| 4   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities of using acquired knowledge and skills   |
| 5   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Job security   |
| 6   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Social recognition and status                          |
| 7   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of pursuing own ideas                      |
| 8   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good social climate                                    |
| 9   | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of pursuing continuous learning            |
| 10  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | High income  |
| 11  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chances of (political) influence                       |
| 12  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Challenging tasks                                      |
| 13  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good career prospects                                  |
| 14  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Enough time for leisure activities                     |
| 15  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Co-ordinating and management tasks                     |
| 16  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibility of working in a team                       |
| 17  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chance of doing something useful for society           |
| 18  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Variety  |
| 19  | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good chances of combining employment with family tasks |







| G3B To what extent do the following aspects apply to your current job situation? |                          |                          |                          |                          |                          | G3B  |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|  | Not at all               |                          |                          | To a very high extent    |                          |  |
|  | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Largely independent disposition of work                |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of undertaking scientific/scholarly work   |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear and well-ordered tasks                           |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibilities of using acquired knowledge and skills   |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Job security   |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Social recognition and status                          |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of pursuing own ideas                      |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good social climate                                    |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Opportunity of pursuing continuous learning            |
| 10   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | High income  |
| 11   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chances of (political) influence                       |
| 12   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Challenging tasks                                      |
| 13   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good career prospects                                  |
| 14   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Enough time for leisure activities                     |
| 15   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Coordinating and management tasks                      |
| 16   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Possibility of working in a team                       |
| 17   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Chance of doing something useful for society           |
| 18   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Variety  |
| 19   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Good chances of combining employment with family tasks |





|          |                              |           |
|----------|------------------------------|-----------|
| <b>H</b> | <b>Professional Training</b> | <b>S1</b> |
|----------|------------------------------|-----------|

No questions selected from this part of the CHEERS questionnaire.

|          |                              |           |
|----------|------------------------------|-----------|
| <b>I</b> | <b>Socio-Biographic data</b> | <b>S1</b> |
|----------|------------------------------|-----------|

|           |                             |            |
|-----------|-----------------------------|------------|
| <b>I1</b> | <b>What is your gender?</b> | <b>Q81</b> |
|-----------|-----------------------------|------------|

- |   |                          |        |
|---|--------------------------|--------|
| 1 | <input type="checkbox"/> | Male   |
| 2 | <input type="checkbox"/> | Female |

|           |                                     |            |
|-----------|-------------------------------------|------------|
| <b>I2</b> | <b>In which year were you born?</b> | <b>Q82</b> |
|-----------|-------------------------------------|------------|

- |   |                      |                      |                      |                      |               |
|---|----------------------|----------------------|----------------------|----------------------|---------------|
| 1 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Year of birth |
|---|----------------------|----------------------|----------------------|----------------------|---------------|

|            |   |            |
|------------|---|------------|
| <b>I6A</b> | <b>Did you live immediately prior to graduation in 1994 or 1995...?</b> | <b>Q60</b> |
|------------|---|------------|

- |   |                          |                     |
|---|--------------------------|---------------------|
| 1 | <input type="checkbox"/> | with a partner?     |
| 2 | <input type="checkbox"/> | with parents?       |
| 3 | <input type="checkbox"/> | with other persons? |
| 4 | <input type="checkbox"/> | as single?          |
| 5 | <input type="checkbox"/> | with a partner?     |

|            |                                  |            |
|------------|----------------------------------|------------|
| <b>I6B</b> | <b>Do you live currently...?</b> | <b>Q60</b> |
|------------|----------------------------------|------------|

- |   |                          |                     |
|---|--------------------------|---------------------|
| 1 | <input type="checkbox"/> | with a partner?     |
| 2 | <input type="checkbox"/> | with parents?       |
| 3 | <input type="checkbox"/> | with other persons? |
| 4 | <input type="checkbox"/> | as single?          |
| 5 | <input type="checkbox"/> | with a partner?     |



**J Retrospective Assessment of Studies S1**

**J1 To what extent did your studies help you...? J1**

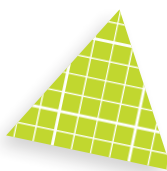
|   | Not at all               |                          |                          | To a very high extent    |                          |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | finding a satisfying job after finishing your studies? |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for your long-term career prospects?                   |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | for the development of your personality?               |

**J2 Looking back, if you were free to choose again, how likely would you...? J2**

|   | Not likely at all        |                          |                          | Very likely              |                          |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
|   | 1                        | 2                        | 3                        | 4                        | 5                        |  |
| 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | choose the same course of study?                           |
| 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | choose the same institution of higher education?           |
| 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | choose a higher degree level of higher education? [NatCat] |
| 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | choose a lower degree level of higher education? [NatCat]  |
| 5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | decide not to study at all?                                |

Thank you very much for completing the questionnaire.





## Appendix 2: Data documentation (codebook) of the tracer study 2000

Tracer study 2000  
Survey of graduates of the year 1995

Sample codebook

Selected variables from the Cheers (careers after higher education a European research study) project are used for the sample codebook.

| H1 | Z. | Key data |
|----|----|----------|
|----|----|----------|

| QU | Z1                | Case number          |
|----|-------------------|----------------------|
| VN | Variable name     | Variable label       |
| CV | <b>ID</b>         | Case number          |
| VV | Value/codes       | Value label          |
| CC | 1                 | Case 1               |
| CC | 2                 | Case 2               |
| CC | 3                 | Case 3               |
| OT | Other information | Text                 |
| SU | Subject           | Case number          |
| IN | Indications       | Very import          |
| CH | Check             | Double case numbers? |
| QF | Questionnaire     |                      |
| DA | Data analysis     |                      |

| QU | Z2                | Country             |
|----|-------------------|---------------------|
| VN | Variable name     | Variable label      |
| CV | <b>COUNTRY</b>    | Country             |
| VV | Value/codes       | Value label         |
| CC | 1                 | Italy               |
| CC | 2                 | Germany             |
| CC | 3                 | United Kingdom      |
| CC | 4                 | Japan               |
| CC | -9                | No answer           |
| OT | Other information | Text                |
| SU | Subject           | Country             |
| IN | Indications       |                     |
| CH | Check             | No missings allowed |
| MV | Missing value     | -9                  |
| QF | Questionnaire     |                     |
| DA | Data analysis     |                     |



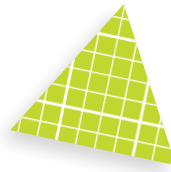
|    |           |                        |
|----|-----------|------------------------|
| H1 | <b>A.</b> | <b>Course of Study</b> |
|----|-----------|------------------------|

No questions extracted.

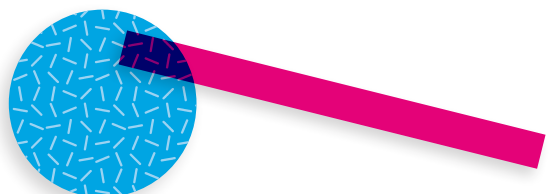
|    |           |                          |
|----|-----------|--------------------------|
| H1 | <b>B.</b> | <b>Course of Studies</b> |
|----|-----------|--------------------------|

| QU | <b>B1</b>         | <b>What has been your (major) field of study?</b> |
|----|-------------------|---|
| VN | Variable name     | Variable label                                    |
| CV | <b>FIELD</b>      | Field of study                                    |
| VV | Value/codes       | Value label                                       |
| CC | 1                 | Humanities  |
| CC | 2                 | Sciences  |
| CC | 3                 | Engineering                                       |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Major Field of Study                              |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |

| QU | <b>B2</b>         | <b>Did you spend any time abroad during the period of your study (in order to work or to study)?</b> |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| CV | <b>B2</b>         | Time spent abroad during study period  |
| VV | Value/codes       | Value label  |
| CC | 1                 | Yes  |
| CC | 2                 | No   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Time Spent Abroad During Study Period  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |



|    |                   |   |
|----|-------------------|---|
| QU | <b>B8</b>         | <b>If you look back to your course of study that you graduated from in 1994 or 1995: to what extent were the following modes of teaching and learning emphasised by your institution of higher education and its teachers? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'.</b> |
| VN | Variable name     | Variable label  |
| OR | <b>B8_1</b>       | Facts and instrumental knowledge  |
| OR | <b>B8_2</b>       | Theories, concepts or paradigms   |
| OR | <b>B8_3</b>       | Attitudes and socio-communicative skills  |
| OR | <b>B8_4</b>       | Independent learning  |
| OR | <b>B8_5</b>       | Regular class attendance  |
| OR | <b>B8_6</b>       | Teacher as the main source of information and understanding   |
| OR | <b>B8_7</b>       | Freedom to choose courses and areas of specialisation   |
| OR | <b>B8_8</b>       | Project and problem-based learning  |
| OR | <b>B8_9</b>       | Direct acquisition of work experience   |
| OR | <b>B8_10</b>      | Out-of-class communication between students and staff   |
| OR | <b>B8_11</b>      | Writing a thesis  |
| OR | <b>B8_12</b>      | Detailed regular assessment of academic progress  |
| VV | Value/codes       | Value label   |
| CC | 1                 | 1 Not at all  |
| CC | 2                 | 2   |
| CC | 3                 | 3   |
| CC | 4                 | 4   |
| CC | 5                 | 5 To a very high extent   |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Emphasis on Modes of Teaching and Learning  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |





| QU | B9                | How do you rate the study provision and study conditions you experienced in the course of study that you graduated from in 1994 or 1995? Scale of answers from 1 = 'Very bad' to 5 = ,Very good'. |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| OR | <b>B9_1</b>       | Academic advice offered in general  |
| OR | <b>B9_2</b>       | Assistance/advice for your final examination  |
| OR | <b>B9_3</b>       | Course content of major   |
| OR | <b>B9_4</b>       | Variety of courses offered  |
| OR | <b>B9_5</b>       | Design of degree program  |
| OR | <b>B9_6</b>       | Testing/grading system  |
| OR | <b>B9_7</b>       | Opportunity to choose courses and areas of specialisation   |
| OR | <b>B9_8</b>       | Practical emphasis of teaching and learning   |
| OR | <b>B9_9</b>       | Teaching quality  |
| OR | <b>B9_10</b>      | Chances to participate in research projects   |
| OR | <b>B9_11</b>      | Research emphasis of teaching and learning  |
| OR | <b>B9_12</b>      | Provision of work placements and other work experience  |
| OR | <b>B9_13</b>      | Opportunity of out-of-class contacts with teaching staff  |
| OR | <b>B9_14</b>      | Contacts with fellow students   |
| OR | <b>B9_15</b>      | Chance for students to have an impact on university policies  |
| OR | <b>B9_16</b>      | Equipment and stocking of libraries   |
| OR | <b>B9_17</b>      | Supply of teaching material   |
| OR | <b>B9_18</b>      | Quality of technical equipment (e.g. PC, measuring instruments, etc.)   |
| VV | Value/codes       | Value label   |
| CC | 1                 | 1 Very bad  |
| CC | 2                 | 2   |
| CC | 3                 | 3   |
| CC | 4                 | 4   |
| CC | 5                 | 5 Very good   |
| CC | 9                 | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Rating of Study Provisions and Conditions   |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |

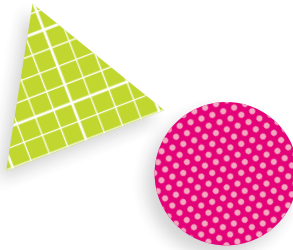


|    |           |                                    |
|----|-----------|------------------------------------|
| H1 | <b>C.</b> | <b>Job Search After Graduation</b> |
|----|-----------|------------------------------------|

| QU | C1                | Did you ever seek a job since graduation 1994 or 1995? Exclude applications for casual and vacation jobs. |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| MD | <b>C1_1</b>       | Yes, I sought a job since graduation  |
| MD | <b>C1_2</b>       | No, I set up my own business/self-employment  |
| MD | <b>C1_3</b>       | No, I continued the job I had before graduation   |
| MD | <b>C1_4</b>       | No, I continued to study  |
| MD | <b>C1_5</b>       | No, I obtained work without actually searching  |
| MD | <b>C1_6</b>       | Other   |
| VV | Value/codes       | Value label   |
| CC | 1                 | Yes   |
| CC | 2                 | No  |
| CC | -9                | No answer to C1   |
| OT | Other information |   |
| SU | Subject           | Job Search Since Graduation   |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



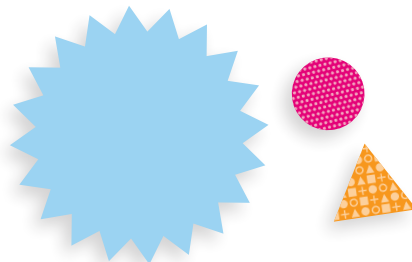


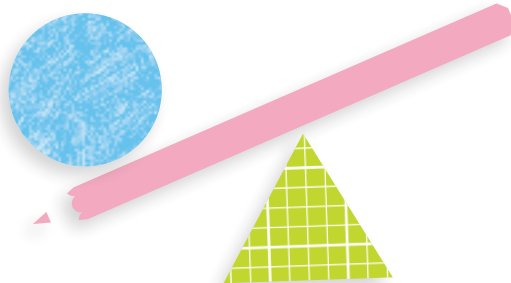


| QU | C4                | How did you try to find the first job after graduation? Multiple reply possible.          |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| MD | C4_1              | I applied for an advertised vacancy   |
| MD | C4_2              | I contacted employers without knowing about a vacancy                                     |
| MD | C4_3              | I launched advertisements by myself   |
| MD | C4_4              | I was approached by an employer   |
| MD | C4_5              | I contacted a public employment agency  |
| MD | C4_6              | I contacted a commercial employment agency  |
| MD | C4_7              | I enlisted the help of the careers/placement office of my institution of higher education |
| MD | C4_8              | I enlisted the help of teaching staff of the institution of higher education              |
| MD | C4_9              | I established contacts while working during the course of study                           |
| MD | C4_10             | I used other personal connections/contacts (e.g. parents, relatives, friends)             |
| MD | C4_11             | I started my own business/self-employment   |
| MD | C4_12             | Other   |
| VV | Value/codes       | Value label   |
| CC | 1                 | Yes   |
| CC | 2                 | No  |
| CC | 8                 | Not applicable, no job search   |
| CC | -9                | No answer to C4   |
| OT | Other information | Text  |
| SU | Subject           | Methods of Job Search   |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



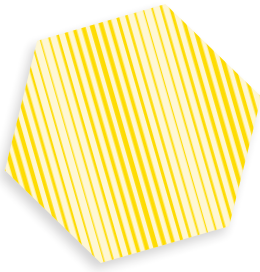
| QU | C5                | Which method was the most important for getting your first job after graduation in 1994 or 1995? Please fill in the item number from question C4. |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| CV | C5                | Most important method for getting the first job after graduation  |
| VV | Value/codes       | Value label   |
| CC | 1                 | I applied for an advertised vacancy   |
| CC | 2                 | I contacted employers without knowing about a vacancy   |
| CC | 3                 | I launched advertisements by myself   |
| CC | 4                 | I was approached by an employer   |
| CC | 5                 | I contacted a public employment agency  |
| CC | 6                 | I contacted a commercial employment agency  |
| CC | 7                 | I enlisted the help of the careers/placement office of my institution of higher education   |
| CC | 8                 | I enlisted the help of teaching staff of the institution of higher education  |
| CC | 9                 | I established contacts while working during the course of study   |
| CC | 10                | I used other personal connections/contacts (e.g. parents, relatives, friends)   |
| CC | 11                | I started my own business/self-employment   |
| CC | 12                | Other   |
| CC | -8                | Not applicable, I have not found a job after graduation   |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Most Important Method for Getting First Job After Graduation  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |





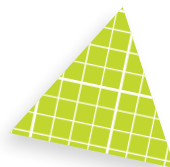
| QU  | C6                | How many employers did you contact (by e.g. letter) before you took up your first job after graduation in 1994 or 1995? |
|-----|-------------------|---|
| VN  | Variable name     | Variable label  |
| ME3 | C6                | Number of employers contacted   |
| VV  | Value/codes       | Value label   |
| CC  | 0                 | Zero employers  |
| CC  | 1                 | 1 employer  |
| CC  | 2                 | 2 employers   |
| CC  | 3                 | 3 employers   |
| CC  | -7                | Filtered, no job search   |
| CC  | -8                | Filtered, no job found  |
| CC  | -9                | No answer   |
| OT  | Other information | Text  |
| SU  | Subject           | Number of Employers Contacted Before First Job After Graduation   |
| IN  | Indications       |   |
| CH  | Check             |   |
| MV  | Missing value     | -9 THRU -1  |
| QF  | Questionnaire     |   |
| DA  | Data analysis     |   |

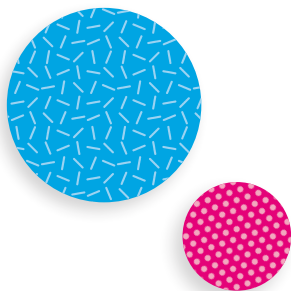
| QU | C7                | How many months have you sought altogether (before or after graduation) for your first job after graduation in 1994 or 1995, which you consider not to be a casual job? |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| ME | C7                | Duration of job search  |
| VV | Value/codes       | Value label   |
| CC | -8                | Not applicable, no job search   |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Duration of Job Search for First Job After Graduation in 1994/1995  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



| QU | C10A              | What is your current major activity?               |
|----|-------------------|--|
| VN | Variable name     | Variable label                                     |
| CV | <b>C10A</b>       | Kind of major activity                             |
| VV | Value/codes       | Value label  |
| CC | 1                 | Employed   |
| CC | 2                 | Self-employed                                      |
| CC | 3                 | Not employed, seeking employment                   |
| CC | 4                 | Professional training                              |
| CC | 5                 | Advanced academic study                            |
| CC | 6                 | Child rearing, family care                         |
| CC | 7                 | Other  |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Kind of Major Activity Four Years After Graduation |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

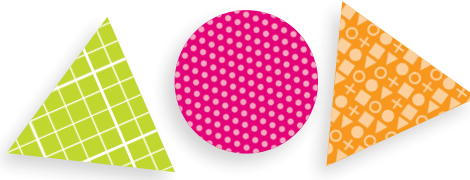
| QU | C10B              | Are you full-time or part-time employed? |
|----|-------------------|--|
| VN | Variable name     | Variable label                           |
| CV | <b>C10B</b>       | Full-time or part-time activity          |
| VV | Value/codes       | Value label                              |
| CC | 1                 | Full-time                                |
| CC | 2                 | Part-time                                |
| CC | 8                 | Not employed                             |
| CC | -9                | No answer                                |
| OT | Other information | Text                                     |
| SU | Subject           | Full-time Employment                     |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1                               |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |





| QU | C10C              | Do you have a permanent or temporary contract? |
|----|-------------------|--|
| VN | Variable name     | Variable label                                 |
| CV | <b>C10C</b>       | Type of contract                               |
| VV | Value/codes       | Value label                                    |
| CC | 1                 | Permanent                                      |
| CC | 2                 | Temporary                                      |
| CC | 8                 | Not employed                                   |
| CC | -9                | No answer                                      |
| OT | Other information | Text   |
| SU | Subject           | Type of Contract                               |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1                                     |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

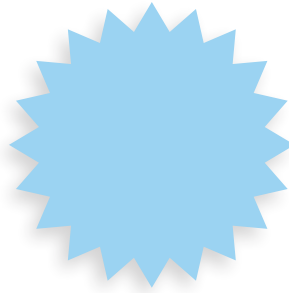
| QU | C10D              | What is your job title? |
|----|-------------------|-------------------------|
| VN | Variable name     | Variable label          |
| CV | <b>C10D</b>       | Job title               |
| VV | Value/codes       | Value label             |
| CC | 1                 | Senior managers         |
| CC | 2                 | Professionals           |
| CC | 3                 | Technicians             |
| CC | 4                 | Clerks                  |
| CC | 5                 | Service workers         |
| CC | 6                 | Skilled agriculture     |
| CC | 7                 | Craft and related       |
| CC | 8                 | Plant and machine       |
| CC | 9                 | Elementary occupation   |
| CC | -8                | Filtered, not employed  |
| CC | -9                | No answer               |
| OT | Other information | Text                    |
| SU | Subject           | Job Title               |
| IN | Indications       |                         |
| CH | Check             |                         |
| MV | Missing value     | -9 THRU -1              |
| QF | Questionnaire     |                         |
| DA | Data analysis     |                         |



|    |           |                            |
|----|-----------|----------------------------|
| H1 | <b>D.</b> | <b>Employment and Work</b> |
|----|-----------|----------------------------|

| QU | <b>D1</b>         | <b>If you are currently employed/self-employed: How would you describe your current professional situation? Multiple reply possible.</b> |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| MD | <b>D1_1</b>       | I have regular employment/I am self-employed   |
| MD | <b>D1_2</b>       | I have casual jobs related to my study   |
| MD | <b>D1_3</b>       | I have casual jobs not related to my study   |
| MD | <b>D1_4</b>       | I have more than one job   |
| MD | <b>D1_5</b>       | I am currently doing military or civilian service  |
| MD | <b>D1_6</b>       | Other  |
| VV | Value/codes       | Value label  |
| CC | 1                 | Yes  |
| CC | 2                 | No   |
| CC | -8                | Filtered, not employed   |
| CC | -9                | -9 THRU -1   |
| OT | Other information | Text   |
| SU | Subject           | Current professional situation   |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

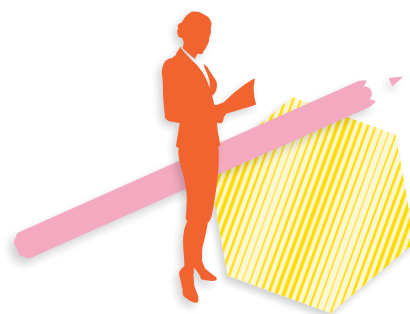
| QU | <b>D4</b>         | <b>Please state the kind of your current employer/institution (if several, please refer to main employer)? Please mark one single item only.</b> |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| CV | <b>D4</b>         | Kind of current employer/institution   |
| VV | Value/codes       | Value label  |
| CC | 1                 | Public employer  |
| CC | 2                 | Non-profit organisation  |
| CC | 3                 | Private employer   |
| CC | 4                 | Self-employed  |
| CC | 5                 | Other  |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Kind of current employer/institution   |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |



| QU | D5                | In which economic sector are you currently working? |
|----|-------------------|---|
| VN | Variable name     | Variable label                                      |
| CV | D5                | Economic sector                                     |
| VV | Value/codes       | Value label   |
| CC | 1                 | Production  |
| CC | 2                 | Business  |
| CC | 3                 | Public admin.                                       |
| CC | 4                 | Education   |
| CC | -8                | Filtered, not employed                              |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Economic sector of current work                     |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |

| QU | D9                | Please estimate, to the best of your ability, the approximate number of people who are working in... |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| ME | D9_1              | Number of people in the location where you currently work  |
| ME | D9_2              | Number of people in the entire organisation if there is more than one location                       |
| VV | Value/codes       | Value label  |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Size of Company  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |





| QU  | D11               | What is your approximate annual gross income?: (Thousand.)     |
|-----|-------------------|--|
| VN  | Variable name     | Variable label   |
| ME5 | D11               | Annual Gross Income  |
| VV  | Value/codes       | Value label  |
| CC  | 1                 | 1,000  |
| CC  | 2                 | 2,000  |
| CC  | 20                | 20,000   |
| CC  | 30                | 30,000   |
| CC  | 50                | 50,000   |
| CC  | -8                | Filtered, not employed   |
| CC  | -9                | No answer  |
| OT  | Other information | Text   |
| SU  | Subject           | Annual Gross Income (including extra payments and second jobs) |
| IN  | Indications       |  |
| CH  | Check             |  |
| MV  | Missing value     | -9 THRU -1   |
| QF  | Questionnaire     |  |
| DA  | Data analysis     |  |

|    |           |  |
|----|-----------|--|
| H1 | <b>E.</b> | <b>Acquired Competencies and Work Requirements</b> |
|----|-----------|--|

| QU | E1A           | Please, state the extent to which you had the following competencies at the time of graduation in 1994 or 1995? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'. |
|----|---------------|--|
| VN | Variable name | Variable label   |
| OR | E1A_1         | Broad general knowledge  |
| OR | E1A_2         | Cross-disciplinary thinking/knowledge  |
| OR | E1A_3         | Field-specific theoretical knowledge   |
| OR | E1A_4         | Field-specific knowledge of methods  |
| OR | E1A_5         | Foreign language proficiency   |
| OR | E1A_6         | Computer skills  |
| OR | E1A_7         | Understanding complex social, organisational and technical systems   |
| OR | E1A_8         | Planning, co-ordinating and organising   |
| OR | E1A_9         | Applying rules and regulations   |
| OR | E1A_10        | Economic reasoning   |
| OR | E1A_11        | Documenting ideas and information  |
| OR | E1A_12        | Problem-solving ability  |
| OR | E1A_13        | Analytical competencies  |





|    |                   |   |
|----|-------------------|---|
| OR | <b>E1A_14</b>     | Learning abilities                                  |
| OR | <b>E1A_15</b>     | Reflective thinking, assessing one's own work       |
| OR | <b>E1A_16</b>     | Creativity  |
| OR | <b>E1A_17</b>     | Working under pressure                              |
| OR | <b>E1A_18</b>     | Accuracy, attention to detail                       |
| OR | <b>E1A_19</b>     | Time management                                     |
| OR | <b>E1A_20</b>     | Negotiating   |
| OR | <b>E1A_21</b>     | Fitness for work                                    |
| OR | <b>E1A_22</b>     | Manual skill  |
| OR | <b>E1A_23</b>     | Working independently                               |
| OR | <b>E1A_24</b>     | Working in a team                                   |
| OR | <b>E1A_25</b>     | Initiative  |
| OR | <b>E1A_26</b>     | Adaptability  |
| OR | <b>E1A_27</b>     | Assertiveness, decisiveness, persistence            |
| OR | <b>E1A_28</b>     | Power of concentration                              |
| OR | <b>E1A_29</b>     | Getting personally involve                          |
| OR | <b>E1A_30</b>     | Loyalty, integrity                                  |
| OR | <b>E1A_31</b>     | Critical thinking                                   |
| OR | <b>E1A_32</b>     | Oral communication skill                            |
| OR | <b>E1A_33</b>     | Written communication skill                         |
| OR | <b>E1A_34</b>     | Tolerance, appreciating of different points of view |
| OR | <b>E1A_35</b>     | Leadership  |
| OR | <b>E1A_36</b>     | Taking responsibilities, decision                   |
| VV | Value/codes       | Value label   |
| CC | 1                 | 1 Not at all  |
| CC | 2                 | 2   |
| CC | 3                 | 3   |
| CC | 4                 | 4   |
| CC | 5                 | 5 To a very high extent                             |
| CC | 9                 | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Competencies at Time of Graduation                  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



| QU | E1B           | To what extent are the competencies required in your current work. Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'. |
|----|---------------|---|
| VN | Variable name | Variable label  |
| OR | E1B_1         | Broad general knowledge   |
| OR | E1B_2         | Cross-disciplinary thinking/knowledge   |
| OR | E1B_3         | Field-specific theoretical knowledge  |
| OR | E1B_4         | Field-specific knowledge of methods   |
| OR | E1B_5         | Foreign language proficiency  |
| OR | E1B_6         | Computer skills   |
| OR | E1B_7         | Understanding complex social, organisational and technical systems  |
| OR | E1B_8         | Planning, co-ordinating and organising  |
| OR | E1B_9         | Applying rules and regulations  |
| OR | E1B_10        | Economic reasoning  |
| OR | E1B_11        | Documenting ideas and information   |
| OR | E1B_12        | Problem-solving ability   |
| OR | E1B_13        | Analytical competencies   |
| OR | E1B_14        | Learning abilities  |
| OR | E1B_15        | Reflective thinking, assessing one's own work   |
| OR | E1B_16        | Creativity  |
| OR | E1B_17        | Working under pressure  |
| OR | E1B_18        | Accuracy, attention to detail   |
| OR | E1B_19        | Time management   |
| OR | E1B_20        | Negotiating   |
| OR | E1B_21        | Fitness for work  |
| OR | E1B_22        | Manual skill  |
| OR | E1B_23        | Working independently   |
| OR | E1B_24        | Working in a team   |
| OR | E1B_25        | Initiative  |
| OR | E1B_26        | Adaptability  |
| OR | E1B_27        | Assertiveness, decisiveness, persistence  |
| OR | E1B_28        | Power of concentration  |
| OR | E1B_29        | Getting personally involve  |
| OR | E1B_30        | Loyalty, integrity  |
| OR | E1B_31        | Critical thinking   |
| OR | E1B_32        | Oral communication skill  |
| OR | E1B_33        | Written communication skills  |
| OR | E1B_34        | Tolerance, appreciating of different points of view   |
| OR | E1B_35        | Leadership  |

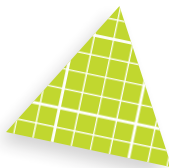


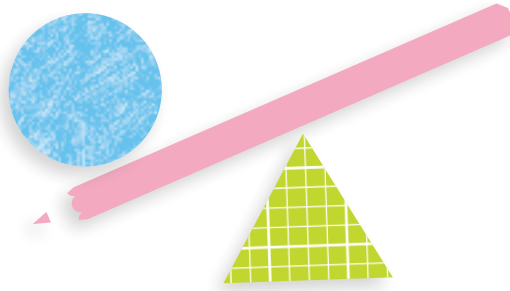
|    |                   |                                   |
|----|-------------------|-----------------------------------|
| OR | <b>E1B_36</b>     | Taking responsibilities, decision |
| VV | Value/codes       | Value label                       |
| CC | 1                 | 1 Not at all                      |
| CC | 2                 | 2                                 |
| CC | 3                 | 3                                 |
| CC | 4                 | 4                                 |
| CC | 5                 | 5 To a very high extent           |
| CC | -8                | Filtered, not employed            |
| CC | -9                | No answer                         |
| OT | Other information | Text                              |
| SU | Subject           | Work Requirements                 |
| IN | Indications       |                                   |
| CH | Check             |                                   |
| MV | Missing value     | -9 THRU -1                        |
| QF | Questionnaire     |                                   |
| DA | Data analysis     |                                   |

|    |                   |   |
|----|-------------------|---|
| QU | <b>E2</b>         | <b>To what extent has your study (you graduated from 1994 or 1995) been useful for...? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'.</b> |
| VN | Variable name     | Variable label  |
| OR | <b>E2_1</b>       | Preparing for your present work tasks   |
| OR | <b>E2_2</b>       | Preparing for tasks in other spheres of life  |
| VV | Value/codes       | Value label   |
| CC | 1                 | 1 Not at all  |
| CC | 2                 | 2   |
| CC | 3                 | 3   |
| CC | 4                 | 4   |
| CC | 5                 | 5 To a very high extent   |
| CC | 8                 | Not applicable, not employed  |
| CC | 9                 | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Utility of Study  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |

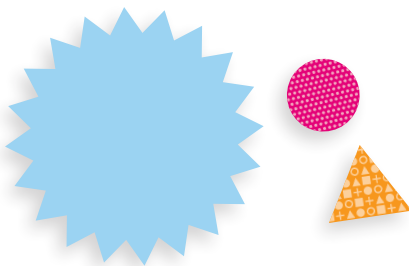


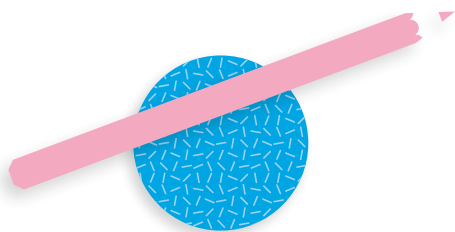
| H1 | F.                | Relationship Between Study and Work  |
|----|-------------------|--|
| QU | <b>F1</b>         | <b>If you take into consideration your current work tasks altogether: To what extent do you use the knowledge and skills acquired in the course of study (you graduated from 1994 or 1995)? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'.</b> |
| VN | Variable name     | Variable label   |
| OR | <b>F1</b>         | Use of knowledge and skills  |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Not at all   |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 To a very high extent  |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Use of Knowledge and Skills Acquired in the Course of Study  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |





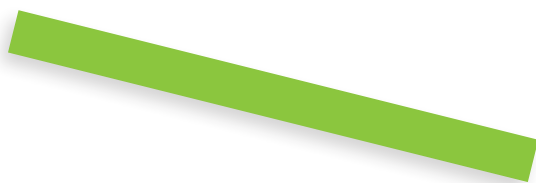
| QU | F2                | How would you characterise the relationship between your field of study and your area of work? |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| MD | F2_1              | My field of study is the only possible/by far the best field                                   |
| MD | F2_2              | Some other fields could prepare for the area of work as well                                   |
| MD | F2_3              | Another field would have been more useful  |
| MD | F2_4              | The field of study does not matter very much   |
| MD | F2_5              | Higher education studies are not at all related to my area of work                             |
| MD | F2_6              | Others   |
| VV | Value/codes       | Value label  |
| CC | 1                 | Yes  |
| CC | 2                 | No   |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Relationship Between Field of Study and Area of Work   |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |





| QU | F3A               | If you consider all dimensions of your employment and work (status, position, income, work tasks, etc.):<br>a. To what extent is your employment and work appropriate to your level of education?<br>Scale of answers from 1 = ,Not at all appropriate' to 5 = ,Completely appropriate' .. |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| OR | F3A               | Appropriateness of level of education for employment and work  |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Not at all appropriate   |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 Completely appropriate   |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Appropriateness of Level of Education for Employment and Work  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

| QU | F3B               | What is the most appropriate level of course of study/degree for your employment and work in comparison to that which you graduated from in 1994 or 1995? |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| CV | F3B               | Most appropriate level of course of study / degree  |
| VV | Value/codes       | Value label   |
| CC | 1                 | A higher level than the one I graduated from  |
| CC | 2                 | The same level  |
| CC | 3                 | A lower level of higher/tertiary education  |
| CC | 4                 | No higher/tertiary education at all   |
| CC | 5                 | Other   |
| CC | -8                | Filtered, not employed  |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Most Appropriate Level of Course of Study/Degree  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



| QU | F4                | If you consider your employment and work as not particularly appropriate and not linked to your education: why did you take it up?<br>Multiple reply possible. |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| MD | F4_1              | I have not (yet) been able to find a job more appropriate  |
| MD | F4_2              | In doing this job I have better career prospects   |
| MD | F4_3              | I prefer an occupation which is not closely connected to my studies  |
| MD | F4_4              | I was promoted to a position less linked to my studies than my previous position(s)  |
| MD | F4_5              | I can get a higher income in my current job  |
| MD | F4_6              | My current job offers me more security   |
| MD | F4_7              | My current job is more interesting   |
| MD | F4_8              | My current job provides the opportunity for part-time/flexible schedules etc.  |
| MD | F4_9              | My current job enables me to work in a locality which I prefer   |
| MD | F4_10             | My current job allows me to take into account family needs   |
| MD | F4_11             | At the beginning of the career envisaged I have to accept work not closely linked to my study  |
| MD | F4_12             | Other  |
| MD | F4_13             | Not applicable, I consider my job closely linked to my studies   |
| VV | Value/codes       | Value label  |
| CC | 1                 | Yes  |
| CC | 2                 | No   |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Reasons for taking a job not closely linked to study   |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |



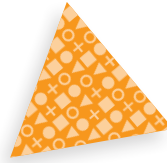
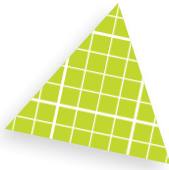


|    |           |   |
|----|-----------|---|
| H1 | <b>G.</b> | <b>Work Orientations and Job Satisfaction</b> |
|----|-----------|---|

| QU | <b>G1</b>         | <b>Altogether, to what extent are you satisfied with your current work?<br/>Scale of answers from 1 = 'Very dissatisfied' to 5 = 'Very satisfied'.</b> |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| OR | <b>G1</b>         | General satisfaction with current work   |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Very dissatisfied  |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 Very satisfied   |
| CC | -8                | Filtered, not employed   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | General Satisfaction with Current Work   |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |







| QU | G3A               | How important are the following characteristics of an occupation for you personally? Scale of answers from 1 = ,Not at all important' to 5 = ,Very important'. |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| OR | G3A_1             | Largely independent disposition of work  |
| OR | G3A_2             | Opportunity of undertaking scientific/scholarly work   |
| OR | G3A_3             | Clear and well-ordered tasks   |
| OR | G3A_4             | Possibilities of using acquired knowledge and skills   |
| OR | G3A_5             | Job security   |
| OR | G3A_6             | Social recognition and status  |
| OR | G3A_7             | Opportunity of pursuing own ideas  |
| OR | G3A_8             | Good social climate  |
| OR | G3A_9             | Opportunity of pursuing continuous learning  |
| OR | G3A_10            | High income  |
| OR | G3A_11            | Chances of (political) influence   |
| OR | G3A_12            | Challenging tasks  |
| OR | G3A_13            | Good career prospects  |
| OR | G3A_14            | Enough time for leisure activities   |
| OR | G3A_15            | Coordinating and management tasks  |
| OR | G3A_16            | Possibility of working in a team   |
| OR | G3A_17            | Chance of doing something useful for society   |
| OR | G3A_18            | Variety  |
| OR | G3A_19            | Good chances of combining employment with family tasks   |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Not at all important   |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 Very important   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Work Orientations  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |



| QU | G3B               | To what extent do the following characteristics of an occupation apply to your current professional situation? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'. |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| OR | G3B_1             | Largely independent disposition of work   |
| OR | G3B_2             | Opportunity of undertaking scientific/scholarly work  |
| OR | G3B_3             | Clear and well-ordered tasks  |
| OR | G3B_4             | Possibilities of using acquired knowledge and skills  |
| OR | G3B_5             | Job security  |
| OR | G3B_6             | Social recognition and status   |
| OR | G3B_7             | Opportunity of pursuing own ideas   |
| OR | G3B_8             | Good social climate   |
| OR | G3B_9             | Opportunity of pursuing continuous learning   |
| OR | G3B_10            | High income   |
| OR | G3B_11            | Chances of (political) influence  |
| OR | G3B_12            | Challenging tasks   |
| OR | G3B_13            | Good career prospects   |
| OR | G3B_14            | Enough time for leisure activities  |
| OR | G3B_15            | Coordinating and management tasks   |
| OR | G3B_16            | Possibility of working in a team  |
| OR | G3B_17            | Chance of doing something useful for society  |
| OR | G3B_18            | Variety   |
| OR | G3B_19            | Good chances of combining employment with family tasks  |
| VV | Value/codes       | Value label   |
| CC | 1                 | 1 Not at all  |
| CC | 2                 | 2   |
| CC | 3                 | 3   |
| CC | 4                 | 4   |
| CC | 5                 | 5 To a very high extent   |
| CC | -8                | Filtered, not employed  |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Professional Situation  |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



|    |           |                              |
|----|-----------|------------------------------|
| H1 | <b>I.</b> | <b>Socio-biographic data</b> |
|----|-----------|------------------------------|

| QU | I1                | Gender         |
|----|-------------------|----------------|
| VN | Variable name     | Variable label |
| CV | <b>I1</b>         | Gender         |
| VV | Value/codes       | Value label    |
| CC | 1                 | Male           |
| CC | 2                 | Female         |
| CC | -9                | No answer      |
| OT | Other information | Text           |
| SU | Subject           | Gender         |
| IN | Indications       |                |
| CH | Check             |                |
| MV | Missing value     | -9 THRU -1     |
| QF | Questionnaire     |                |
| DA | Data analysis     |                |

| QU  | I2                | Year of birth  |
|-----|-------------------|----------------|
| VN  | Variable name     | Variable label |
| ME2 | <b>I2</b>         | Year of birth  |
| VV  | Value/codes       | Value label    |
| CC  | -9                | No answer      |
| OT  | Other information | Text           |
| SU  | Subject           | Year of Birth  |
| IN  | Indications       |                |
| CH  | Check             |                |
| MV  | Missing value     | -9 THRU -1     |
| QF  | Questionnaire     |                |
| DA  | Data analysis     |                |





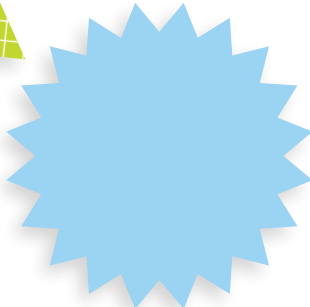
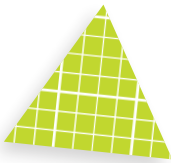
| QU | I6A               | Where did you live prior to graduation? Multiple reply possible. |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| MD | I6A_1             | with a partner   |
| MD | I6A_2             | with parents   |
| MD | I6A_3             | with other persons   |
| MD | I6A_4             | as single  |
| VV | Value/codes       | Value label  |
| CC | 1                 | Yes  |
| CC | 2                 | No   |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Kind of Residence Immediately Prior to Graduation                |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

| QU | I6B               | Where do you live currently? Multiple reply possible. |
|----|-------------------|---|
| VN | Variable name     | Variable label  |
| MD | I6B_1             | with a partner  |
| MD | I6B_2             | with parents  |
| MD | I6B_3             | with other persons                                    |
| MD | I6B_4             | as single   |
| VV | Value/codes       | Value label   |
| CC | 1                 | Yes   |
| CC | 2                 | No  |
| CC | -9                | No answer   |
| OT | Other information | Text  |
| SU | Subject           | Kind of Current Residence                             |
| IN | Indications       |   |
| CH | Check             |   |
| MV | Missing value     | -9 THRU -1  |
| QF | Questionnaire     |   |
| DA | Data analysis     |   |



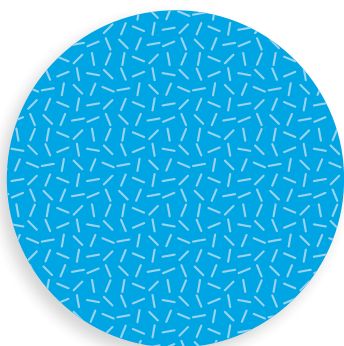
|    |          |  |
|----|----------|--|
| H1 | <b>J</b> | <b>Retrospective assessment of studies</b> |
|----|----------|--|

| QU | <b>J1</b>         | <b>To what extent did your studies help you...? Scale of answers from 1 = ,Not at all' to 5 = ,To a very high extent'.</b> |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| OR | <b>J1_1</b>       | For finding a satisfying job after finishing your studies  |
| OR | <b>J1_2</b>       | For your long-term career prospects  |
| OR | <b>J1_3</b>       | For the development of your personality  |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Not at all   |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 To a very high extent  |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Utility of Study Viewed Retrospectively  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |





| QU | J2                | Looking back, if you were free to choose again, how likely would you...<br>Scale of answers from 1 = ,Not likely at all' to 5 = ,Very likely'. |
|----|-------------------|--|
| VN | Variable name     | Variable label   |
| OR | J2_1              | choose the same course of study  |
| OR | J2_2              | choose the same institution of higher education  |
| OR | J2_3              | choose a higher degree level of higher education   |
| OR | J2_4              | choose a lower degree level of higher education  |
| OR | J2_5              | decide not to study at all   |
| VV | Value/codes       | Value label  |
| CC | 1                 | 1 Not likely at all  |
| CC | 2                 | 2  |
| CC | 3                 | 3  |
| CC | 4                 | 4  |
| CC | 5                 | 5 Very likely  |
| CC | -9                | No answer  |
| OT | Other information | Text   |
| SU | Subject           | Satisfaction with Course of Study  |
| IN | Indications       |  |
| CH | Check             |  |
| MV | Missing value     | -9 THRU -1   |
| QF | Questionnaire     |  |
| DA | Data analysis     |  |

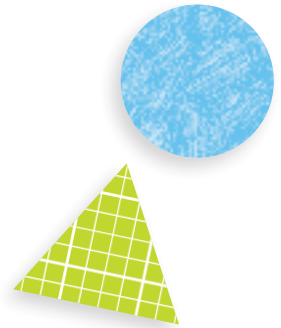


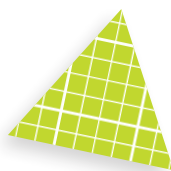
.....

## ANNEX 4.

### Data definition (SPSS syntax)

```
* -----.  
* Data_TSVET_2014_data_definition.sps .  
* -----.  
* Example: a data file (e.g. from an online survey)  
* has been already created.  
* in this step the data will be checked and cleaned.  
* variable lables and value labels are added  
* missing values are set.  
  
* 1. Get the (uncleaned) raw data.  
* 2. Definition of the level of measurement.  
* 3. Definition of labels for variables and values.  
* 4. FREQUENCIES, to document and check the uncleaned data  
* 5. DESCRIPTIVES, to document and check the uncleaned data  
* 6. RECODE OF MULTIPLE REPLY ITEMS  
* 7. Detection and deletion of LURKERS .  
* 8. Detection and correction of double IDs .  
* 9. Handling of filters .  
* 10 Definition of 'Question not asked' .  
* 11. DROP-OUT .  
* 12. FREQUENCIES.  
* 13. DESCRIPTIVES.  
* 14. New variables  
* 15. SAVE the cleaned data.  
  
* -----.  
* OUTPUT SAVE OUTFILE = 'D:\TSVET_2014\DATA\TSVET_2014_data_definition.spv'.  
* -----.  
* 1. get the raw data.  
* -----.  
GET  
  FILE='D:\TSVET_2014\DATA\TSVET_2014_raw_data.sav'.  
DATASET NAME raw_data WINDOW=FRONT.  
  
* -----.  
* 2. Definition of the level of measurement.  
* -----.  
INCLUDE FILE = "Data_TSVET_2014_measurement_level.sps".  
* -----.  
* 3. Definition of labels for variables and values.  
*   also the missing values are defined.  
* -----.  
INCLUDE FILE = "Data_TSVET_2014_labels.sps".
```





\* -----  
\* 4. FREQUENCIES, to document and check the uncleaned data  
\* -----

```
FREQUENCIES      COUNTRY FIELD
B2
B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12
B9_1 B9_2 B9_3 B9_4 B9_5 B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12
  B9_13 B9_14 B9_15 B9_16  B9_17 B9_18
C1_1 C1_2 C1_3 C1_4 C1_5 C1_6
C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12
C5 C6 C7 C10A C10B C10C C10D
D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
D4 D5 D9_1 D9_2 D11
E1A_1 E1A_2 E1A_3 E1A_4 E1A_5 E1A_6 E1A_7 E1A_8 E1A_9 E1A_10 E1A_11 E1A_12
  E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19 E1A_20 E1A_21 E1A_22 E1A_23
E1A_24
  E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33 E1A_34 E1A_35
E1A_36
E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12
  E1B_13 E1B_14 E1B_15 E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23
E1B_24
  E1B_25 E1B_26 E1B_27 E1B_28 E1B_29 E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35
E1B_36
E2_1 E2_2
  F1      F2_1 F2_2 F2_3 F2_4      F2_5 F2_6      F3A F3B
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
G1
G3A_1 G3A_2 G3A_3 G3A_4 G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12
  G3A_13 G3A_14 G3A_15 G3A_16 G3A_17 G3A_18 G3A_19
G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12
  G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19
I1 I2      I6A_1 I6A_2 I6A_3 I6A_4      I6B_1 I6B_2 I6B_3 I6B_4
J1_1 J1_2 J1_3 J2_1      J2_2 J2_3 J2_4 J2_5.
```







```
* -----  
* 5. DESCRIPTIVES, to document and check the uncleaned data  
*   - a very condensed output  
* -----
```

DESCRIPTIVES

COUNTRY FIELD

B2

B8\_1 B8\_2 B8\_3 B8\_4 B8\_5 B8\_6 B8\_7 B8\_8 B8\_9 B8\_10 B8\_11 B8\_12

B9\_1 B9\_2 B9\_3 B9\_4 B9\_5 B9\_6 B9\_7 B9\_8 B9\_9 B9\_10 B9\_11 B9\_12

B9\_13 B9\_14 B9\_15 B9\_16 B9\_17 B9\_18

C1\_1 C1\_2 C1\_3 C1\_4 C1\_5 C1\_6

C4\_1 C4\_2 C4\_3 C4\_4 C4\_5 C4\_6 C4\_7 C4\_8 C4\_9 C4\_10 C4\_11 C4\_12

C5 C6 C7 C10A C10B C10C C10D

D1\_1 D1\_2 D1\_3 D1\_4 D1\_5 D1\_6

D4 D5 D9\_1 D9\_2 D11

E1A\_1 E1A\_2 E1A\_3 E1A\_4 E1A\_5 E1A\_6 E1A\_7 E1A\_8 E1A\_9 E1A\_10 E1A\_11 E1A\_12

E1A\_13 E1A\_14 E1A\_15 E1A\_16 E1A\_17 E1A\_18 E1A\_19 E1A\_20 E1A\_21 E1A\_22 E1A\_23

E1A\_24

E1A\_25 E1A\_26 E1A\_27 E1A\_28 E1A\_29 E1A\_30 E1A\_31 E1A\_32 E1A\_33 E1A\_34 E1A\_35

E1A\_36

E1B\_1 E1B\_2 E1B\_3 E1B\_4 E1B\_5 E1B\_6 E1B\_7 E1B\_8 E1B\_9 E1B\_10 E1B\_11 E1B\_12

E1B\_13 E1B\_14 E1B\_15 E1B\_16 E1B\_17 E1B\_18 E1B\_19 E1B\_20 E1B\_21 E1B\_22 E1B\_23

E1B\_24

E1B\_25 E1B\_26 E1B\_27 E1B\_28 E1B\_29 E1B\_30 E1B\_31 E1B\_32 E1B\_33 E1B\_34 E1B\_35

E1B\_36

E2\_1 E2\_2

F1 F2\_1 F2\_2 F2\_3 F2\_4 F2\_5 F2\_6 F3A F3B

F4\_1 F4\_2 F4\_3 F4\_4 F4\_5 F4\_6 F4\_7 F4\_8 F4\_9 F4\_10 F4\_11 F4\_12 F4\_13

G1

G3A\_1 G3A\_2 G3A\_3 G3A\_4 G3A\_5 G3A\_6 G3A\_7 G3A\_8 G3A\_9 G3A\_10 G3A\_11 G3A\_12

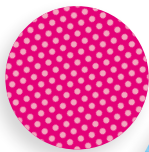
G3A\_13 G3A\_14 G3A\_15 G3A\_16 G3A\_17 G3A\_18 G3A\_19

G3B\_1 G3B\_2 G3B\_3 G3B\_4 G3B\_5 G3B\_6 G3B\_7 G3B\_8 G3B\_9 G3B\_10 G3B\_11 G3B\_12

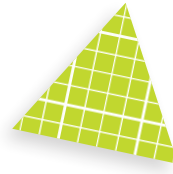
G3B\_13 G3B\_14 G3B\_15 G3B\_16 G3B\_17 G3B\_18 G3B\_19

I1 I2 I6A\_1 I6A\_2 I6A\_3 I6A\_4 I6B\_1 I6B\_2 I6B\_3 I6B\_4

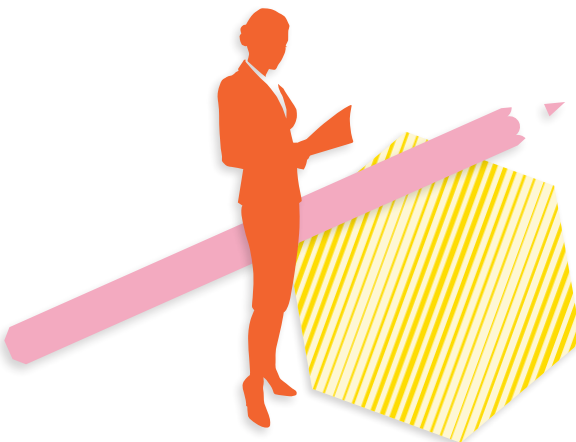
J1\_1 J1\_2 J1\_3 J2\_1 J2\_2 J2\_3 J2\_4 J2\_5.

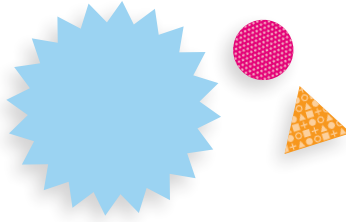


```
* -----
* 6. RECODE OF MULTIPLE REPLY ITEMS .
* -----
* In the raw data there are only two values for
* multiple reply items: 1 = ticked/yes and -9 = no answer.
* It is necessary to recode the 'no answers':
* if at least one item is ticked/answered then the other
* items should be recoded to 2 = No.
* -9 has then the meaning: the whole question is not answered
* -----
* MD Multiple reply variables
  C1_1 C1_2 C1_3 C1_4 C1_5 C1_6
  C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12
  D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
  F2_1 F2_2 F2_3 F2_4 F2_5 F2_6
  F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
  I6A_1 I6A_2 I6A_3 I6A_4
  I6B_1 I6B_2 I6B_3 I6B_4
* -----
SET TVars=Both ODISPLAY=tables TNumbers=Both ONumbers=Both OVars=Both.
* -----
* -----
* Question C1.
* -----
FREQUENCIES      C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 .
MISSING VALUES  C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 ().
RECODE           C1_1 C1_2 C1_3 C1_4 C1_5 C1_6
                 (1 = 1) (ELSE =2).
COUNT          C1ANSWERS = C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 (1).
RECODE          C1ANSWERS (1 thru hi = 0) (0=1).
VARIABLE LABELS C1ANSWERS 'No answers question C1'.
VALUE LABELS    C1ANSWERS 1 'No answers MD question' 0 'Answers' .
DO REPEAT      V = C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 .
+ IF (V EQ 2 AND VALUE(C1ANSWERS) = 1 ) V = -9.
+ MISSING VALUES V(-9 thru -1).
END REPEAT.
* -----
ADD VALUE LABELS  C1_1 C1_2 C1_3 C1_4 C1_5 C1_6
  1 'Yes'
  2 'No'
 -9 'No answer' .
FORMAT          C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 (F2.0)
                / C1ANSWERS (F2.0) .
FREQUENCIES     C1ANSWERS C1_1 C1_2 C1_3 C1_4 C1_5 C1_6 .
* -----
```



```
* -----
* Question C4.
* -----
FREQUENCIES      C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 .
MISSING VALUES  C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 ().
RECODE           C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12
                 (1 = 1) (ELSE =2).
COUNT          C4ANSWERS = C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10
C4_11 C4_12 (1).
RECODE          C4ANSWERS (1 thru hi = 0) (0=1).
VARIABLE LABELS C4ANSWERS 'No answers question C4'.
VALUE LABELS    C4ANSWERS 1 'No answers MD question' 0 'Answers' .
DO REPEAT      V = C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 .
+ IF (V EQ 2 AND VALUE(C4ANSWERS) = 1 ) V = -9.
+ MISSING VALUES V(-9 thru -1).
END REPEAT.
* -----
ADD VALUE LABELS  C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12
 1 'Yes'
 2 'No'
-9 'No answer'.
FORMAT           C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12
(F2.0)
                / C4ANSWERS (F2.0) .
FREQUENCIES      C4ANSWERS C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11
C4_12 .
* -----
```



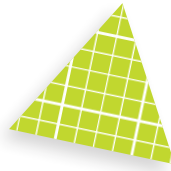


```

-----
* The following MACRO is doing the above described handling
* of multiple reply questions in an efficient way.
-----
* RECODE-MACRO for mult responses
*-----
DEFINE MRRECODE (!POSITIONAL !CHAREND('\'))
                /!POSITIONAL !TOKENS(1) ).
FREQUENCIES    !1 .
MISSING VALUES !1 (.).
RECODE         !1 (1=1) (ELSE=2).
COUNT        !2 = !1 (1).
RECODE         !2 (1 thru hi = 0) (0=1).
VARIABLE LABELS !2 'No answers MD question'.
VALUE LABELS   !2 1 'No answers MD question' 0 'Answers' .
DO REPEAT V =  !1 .
+ IF (V EQ 2 AND VALUE(!2) = 1 ) V = -9.
+ MISSING VALUES V(-9 thru -1).
END REPEAT.
* -----
ADD VALUE LABELS !1
  1 'Ja'
  2 'Nein'
 -9 'No answer'.
FORMAT         !1 (F2.0) / !2 (F2.0).
MISSING VALUES !2 (-9).
FREQUENCIES    !2 !1 .
!ENDDDEFINE.

*   D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
    F2_1 F2_2 F2_3 F2_4 F2_5 F2_6
    F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
    I6A_1 I6A_2 I6A_3 I6A_4
    I6B_1 I6B_2 I6B_3 I6B_4
.

```



```
* Question D1 - application of the MACRO MRRECODE.  
FREQUENCIES D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 .  
MRRECODE D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 /D1ANSWERS .
```

```
* Question F2 - application of the MACRO MRRECODE..  
MRRECODE F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 /F2ANSWERS .
```

```
* Question F4.  
MRRECODE F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 /  
F4ANSWERS .
```

```
* Question I6A.  
MRRECODE I6A_1 I6A_2 I6A_3 I6A_4 /I6AANSWERS .
```

```
* Question I6B.  
MRRECODE I6B_1 I6B_2 I6B_3 I6B_4 /I6BANSWERS .
```





\* -----

\* 7. Detection and deletion of LURKERS .

\* A LURKER is somebody who entered the online questionnaire  
\* but did not answer a single question.

\* -----

```
COMPUTE LURKER=0.
VAR LAB LURKER "Questionnaire empty".
COUNT LURKER =
  FIELD B2 B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12 B9_1 B9_2
  B9_3 B9_4 B9_5
  B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16 B9_17 B9_18 C1_1
  C1_2 C1_3 C1_4 C1_5
  C1_6 C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 C5 C6 C7
  C10A C10B C10C C10D
  D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 D4 D5 D9_1 D9_2 D11 E1A_1 E1A_2 E1A_3 E1A_4 E1A_5
  E1A_6 E1A_7 E1A_8
  E1A_9 E1A_10 E1A_11 E1A_12 E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19
  E1A_20 E1A_21 E1A_22
  E1A_23 E1A_24 E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33
  E1A_34 E1A_35 E1A_36
  E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12
  E1B_13 E1B_14 E1B_15
  E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
  E1B_27 E1B_28 E1B_29
  E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36 E2_1 E2_2 F1 F2_1 F2_2 F2_3
  F2_4 F2_5 F2_6 F3A F3B
  F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 G1 G3A_1
  G3A_2 G3A_3 G3A_4
  G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12 G3A_13 G3A_14 G3A_15 G3A_16
  G3A_17 G3A_18 G3A_19
  G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12
  G3B_13 G3B_14 G3B_15
  G3B_16 G3B_17 G3B_18 G3B_19 I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3
  I6B_4 J1_1 J1_2 J1_3
  J2_1 J2_2 J2_3 J2_4 J2_5
  ( 1 thru hi).
RECODE LURKER (0=1) (1 THRU HI = 2).
VALUE LABELS LURKER
  1 "Yes"
  2 "No".
FREQUENCIES LURKER.
* LURKER are not anymore in the data.
SELECT IF (LURKER = 2).
```



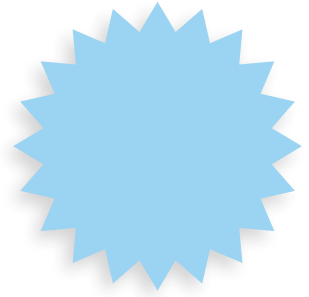
```
*-----.  
* 8. Detection and correction of double ID .  
*-----.  
* to test the procedure to identify double ids  
* a double id is created in the test data.  
* id 4 is from country 2  
* id 5 is from country 1 .  
IF (id = 5 ) id = 4.  
* -----.  
sort cases by ID (A).  
execute.  
* -----.  
COMPUTE DOUBLE = 0.  
VARIABLE LABELS DOUBLE "Double ID number".  
VALUE LABELS DOUBLE 1 "Yes" 0 "No" .  
if ( lag(ID) = ID) DOUBLE = 1.  
FREQUENCIES DOUBLE.  
* --- reverse sorting .  
sort cases by ID (D) DOUBLE (D).  
execute.  
  
* -----.  
COMPUTE DOUBLE_FIRST = 0.  
VARIABLE LABELS DOUBLE_FIRST "The first double ID number".  
if ( lag(ID) = ID) DOUBLE_FIRST = 1.  
FREQUENCIES DOUBLE DOUBLE_FIRST.  
* -----.  
sort cases by ID (A) DOUBLE.  
execute.  
  
* Correction of double id number.  
IF (id = 4 AND DOUBLE = 1) id = 5.  
execute.
```





```
*-----.  
* 9. Handling of filters .  
*-----.  
  
*-----.  
* 1. Job search .  
* C1_1 C1_2 C1_3 C1_4 C1_5 C1_6  
C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12  
C5 C6 C7  
*-----.  
FREQUENCIES C1_1 C1_2 C1_3 C1_4 C1_5 C1_6  
C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12  
C5 C6 C7 C10A C10B C10D D1_1.  
  
COMPUTE JOBSEARCH = VALUE( C1_1 ).  
APPLY DICTIONARY FROM *  
/SOURCE VARIABLES = C1_1  
/TARGET VARIABLES = JOBSEARCH  
/VARINFO LEVEL MISSING FORMAT VARLABEL VALLABELS = REPLACE.  
RECODE JOBSEARCH  
(1=1) (2=0).  
ADD VALUE LABELS JOBSEARCH  
0 "No"  
1 "Yes"  
  
FREQUENCIES JOBSEARCH .  
*-----.  
DO REPEAT V=C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12  
C5 C6 C7.  
IF ( JOBSEARCH = 0 AND MISSING(V) ) V = -8.  
END REPEAT.  
ADD VALUE LABELS  
C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12  
C5 C6 C7  
-8 "Filtered; no job search".  
* test.  
FREQUENCIES C1_1 C1_2 C1_3 C1_4 C1_5 C1_6  
C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12  
C5 C6 C7 .  
* test.  
CROSSTABS  
C5 C6 C7 by C10A C1_1 C1_2 C1_3 C1_4 C1_5 /MISS=INCL.
```





\*-----\*

\* 2. Employment

\*-----\*

\* D1\_1 D1\_2 D1\_3 D1\_4 D1\_5 D1\_6

D4 D5

D9\_1 D9\_2

D11

E1B\_1 E1B\_2 E1B\_3 E1B\_4 E1B\_5 E1B\_6 E1B\_7 E1B\_8

E1B\_9 E1B\_10 E1B\_11 E1B\_12 E1B\_13 E1B\_14 E1B\_15

E1B\_16 E1B\_17 E1B\_18 E1B\_19 E1B\_20 E1B\_21 E1B\_22 E1B\_23 E1B\_24 E1B\_25 E1B\_26

E1B\_27 E1B\_28 E1B\_29

E1B\_30 E1B\_31 E1B\_32 E1B\_33 E1B\_34 E1B\_35 E1B\_36

E2\_1 E2\_2

F1 F2\_1 F2\_2 F2\_3 F2\_4 F2\_5 F2\_6 F3A F3B

F4\_1 F4\_2 F4\_3 F4\_4 F4\_5 F4\_6 F4\_7 F4\_8 F4\_9 F4\_10 F4\_11 F4\_12 F4\_13

G3B\_1 G3B\_2 G3B\_3 G3B\_4 G3B\_5 G3B\_6 G3B\_7 G3B\_8 G3B\_9 G3B\_10

G3B\_11 G3B\_12 G3B\_13 G3B\_14 G3B\_15 G3B\_16 G3B\_17 G3B\_18 G3B\_19 .

FREQUENCIES

D1\_1 D1\_2 D1\_3 D1\_4 D1\_5 D1\_6

D4 D5 D9\_1 D9\_2 D11

E1B\_1 E1B\_2 E1B\_3 E1B\_4 E1B\_5 E1B\_6 E1B\_7 E1B\_8

E1B\_9 E1B\_10 E1B\_11 E1B\_12 E1B\_13 E1B\_14 E1B\_15

E1B\_16 E1B\_17 E1B\_18 E1B\_19 E1B\_20 E1B\_21 E1B\_22 E1B\_23 E1B\_24 E1B\_25 E1B\_26

E1B\_27 E1B\_28 E1B\_29

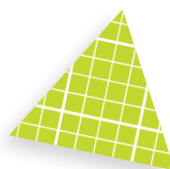
E1B\_30 E1B\_31 E1B\_32 E1B\_33 E1B\_34 E1B\_35 E1B\_36

E2\_1 E2\_2 F1 F2\_1 F2\_2 F2\_3 F2\_4 F2\_5 F2\_6 F3A F3B

F4\_1 F4\_2 F4\_3 F4\_4 F4\_5 F4\_6 F4\_7 F4\_8 F4\_9 F4\_10 F4\_11 F4\_12 F4\_13

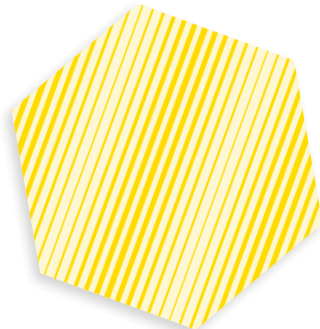
G3B\_1 G3B\_2 G3B\_3 G3B\_4 G3B\_5 G3B\_6 G3B\_7 G3B\_8 G3B\_9 G3B\_10

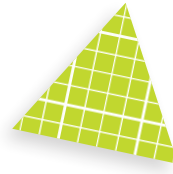
G3B\_11 G3B\_12 G3B\_13 G3B\_14 G3B\_15 G3B\_16 G3B\_17 G3B\_18 G3B\_19 .





```
* -----
COUNT EMPLOYED =   D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
  D4 D5
  D9_1 D9_2
  D11
  E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8
    E1B_9 E1B_10 E1B_11 E1B_12 E1B_13 E1B_14 E1B_15
      E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
      E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36
  E2_1 E2_2
  F1 F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 F3A F3B
  F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
  G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10
    G3B_11 G3B_12 G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19 (1 THRU HI) .
RECODE      EMPLOYED (0=0) (1 THRU HI=1) .
VALUE LABELS EMPLOYED
  0 "No"
  1 "Yes" .
FREQUENCIES  EMPLOYED .
* -----
DO REPEAT V=D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
  D4 D5   D9_1 D9_2  D11
  E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8
    E1B_9 E1B_10 E1B_11 E1B_12 E1B_13 E1B_14 E1B_15
      E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
      E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36
  E2_1 E2_2  F1 F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 F3A F3B
  F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
  G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10
    G3B_11 G3B_12 G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19 .
IF ( EMPLOYED = 0 AND MISSING(V) ) V = -8 .
END REPEAT .
```





ADD VALUE LABELS

```
D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
D4 D5 D9_1 D9_2 D11
E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8
E1B_9 E1B_10 E1B_11 E1B_12 E1B_13 E1B_14 E1B_15
E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36
E2_1 E2_2 F1 F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 F3A F3B
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10
G3B_11 G3B_12 G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19
-8 "Filtered; not employed".
```

\* F4.

```
DO REPEAT V= F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 .
IF ( F4_13 = 1 AND V=2 ) V = -7.
END REPEAT.
ADD VALUE LABELS
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12
-7 "Filtered; appropriate employment".
```

FREQUENCIES

```
F3A F3B
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 .
```

FREQUENCIES

```
D1_1 D1_2 D1_3 D1_4 D1_5 D1_6
D4 D5 D9_1 D9_2 D11
E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8
E1B_9 E1B_10 E1B_11 E1B_12 E1B_13 E1B_14 E1B_15
E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36
E2_1 E2_2 F1 F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 F3A F3B
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13
G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10
G3B_11 G3B_12 G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19 .
```



```
* -----  
* 10 Definition of 'Question not asked' .  
* -----
```

CROSSTABS

```
D1_1 D1_2 D1_3 D1_4 D1_5 D1_6  
D4 D5 D9_1 D9_2 D11  
E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8  
E1B_9 E1B_10 E1B_11 E1B_12 E1B_13 E1B_14 E1B_15  
E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26  
E1B_27 E1B_28 E1B_29  
E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36  
E2_1 E2_2 F1 F2_1 F2_2 F2_3 F2_4 F2_5 F2_6 F3A F3B  
F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13  
G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10  
G3B_11 G3B_12 G3B_13 G3B_14 G3B_15 G3B_16 G3B_17 G3B_18 G3B_19  
by COUNTRY /MISS=INCL.
```

```
IF (COUNTRY = 4) E2_1 = -1.  
IF (COUNTRY = 4) E2_2 = -1.  
ADD VALUE LABELS E2_1 E2_2 -1 "Question not asked".  
CROSSTABS E2_1 E2_2 by country /MISS=incl.
```

```
* -----  
IF (COUNTRY = 4) J2_3 = -1.  
ADD VALUE LABELS J2_3 -1 "Question not asked".  
CROSSTABS J2_3 by COUNTRY /MISS=incl.
```

RECODE

```
I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3 I6B_4  
J1_1 J1_2 J1_3  
J2_1 J2_2 J2_3 J2_4 J2_5 (-4 =-9).
```

FREQUENCIES

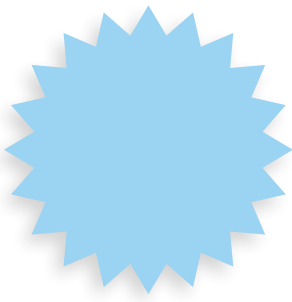
```
I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3 I6B_4  
J2_1 J2_2 J2_3 J2_4 J2_5 .
```





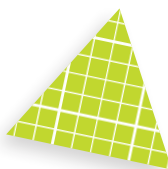
```
* -----  
* 11. Definition of DROP-OUTS.  
* -----
```

```
COMPUTE          LASTVALIDVAR = 0.  
VARIABLE LABELS LASTVALIDVAR "Last valid variable in the data file".  
DO REPEAT V= FIELD B2 B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12  
B9_1 B9_2 B9_3 B9_4 B9_5  
      B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16 B9_17 B9_18 C1_1  
C1_2 C1_3 C1_4 C1_5  
      C1_6 C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 C5 C6 C7  
C10A C10B C10C C10D  
      D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 D4 D5 D9_1 D9_2 D11 E1A_1 E1A_2 E1A_3 E1A_4 E1A_5  
E1A_6 E1A_7 E1A_8  
      E1A_9 E1A_10 E1A_11 E1A_12 E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19  
E1A_20 E1A_21 E1A_22  
      E1A_23 E1A_24 E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33  
E1A_34 E1A_35 E1A_36  
      E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12  
E1B_13 E1B_14 E1B_15  
      E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26  
E1B_27 E1B_28 E1B_29  
      E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36 E2_1 E2_2 F1 F2_1 F2_2 F2_3  
F2_4 F2_5 F2_6 F3A F3B  
      F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 G1 G3A_1  
G3A_2 G3A_3 G3A_4  
      G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12 G3A_13 G3A_14 G3A_15 G3A_16  
G3A_17 G3A_18 G3A_19  
      G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12  
G3B_13 G3B_14 G3B_15  
      G3B_16 G3B_17 G3B_18 G3B_19 I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3  
I6B_4 J1_1 J1_2 J1_3  
      J2_1 J2_2 J2_3 J2_4 J2_5 /VARNUM=1 to 221.  
IF ( V GE 0 ) LASTVALIDVAR = VARNUM.  
END REPEAT.  
FREQ LASTVALIDVAR .
```



```
DO REPEAT V = FIELD B2 B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11
B8_12 B9_1 B9_2 B9_3 B9_4 B9_5
      B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16 B9_17 B9_18 C1_1
C1_2 C1_3 C1_4 C1_5
      C1_6 C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 C5 C6 C7
C10A C10B C10C C10D
      D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 D4 D5 D9_1 D9_2 D11 E1A_1 E1A_2 E1A_3 E1A_4 E1A_5
E1A_6 E1A_7 E1A_8
      E1A_9 E1A_10 E1A_11 E1A_12 E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19
E1A_20 E1A_21 E1A_22
      E1A_23 E1A_24 E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33
E1A_34 E1A_35 E1A_36
      E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12
E1B_13 E1B_14 E1B_15
      E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
      E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36 E2_1 E2_2 F1 F2_1 F2_2 F2_3
F2_4 F2_5 F2_6 F3A F3B
      F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 G1 G3A_1
G3A_2 G3A_3 G3A_4
      G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12 G3A_13 G3A_14 G3A_15 G3A_16
G3A_17 G3A_18 G3A_19
      G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12
G3B_13 G3B_14 G3B_15
      G3B_16 G3B_17 G3B_18 G3B_19 I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3
I6B_4 J1_1 J1_2 J1_3
      / VARNUM =1 to 216.
IF ( (VALUE(V) = -9 ) AND (LASTVALIDVAR < VARNUM)) V = -4 .
END REPEAT.
```





ADD VALUE LABELS

```
FIELD B2 B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12 B9_1 B9_2
B9_3 B9_4 B9_5
      B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16 B9_17 B9_18 C1_1
C1_2 C1_3 C1_4 C1_5
      C1_6 C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 C5 C6 C7
C10A C10B C10C C10D
      D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 D4 D5 D9_1 D9_2 D11 E1A_1 E1A_2 E1A_3 E1A_4 E1A_5
E1A_6 E1A_7 E1A_8
      E1A_9 E1A_10 E1A_11 E1A_12 E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19
E1A_20 E1A_21 E1A_22
      E1A_23 E1A_24 E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33
E1A_34 E1A_35 E1A_36
      E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12
E1B_13 E1B_14 E1B_15
      E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
      E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36 E2_1 E2_2 F1 F2_1 F2_2 F2_3
F2_4 F2_5 F2_6 F3A F3B
      F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 G1 G3A_1
G3A_2 G3A_3 G3A_4
      G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12 G3A_13 G3A_14 G3A_15 G3A_16
G3A_17 G3A_18 G3A_19
      G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12
G3B_13 G3B_14 G3B_15
      G3B_16 G3B_17 G3B_18 G3B_19 I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3
I6B_4 J1_1 J1_2 J1_3
      J2_1 J2_2 J2_3 J2_4 J2_5
-4 "Drop-out".
```



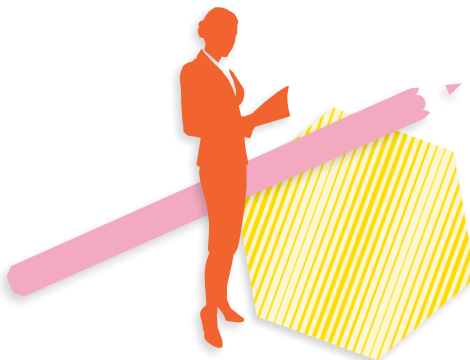


\* 12. FREQUENCIES.

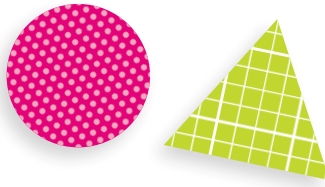
FREQUENCIES

FIELD B2 B8\_1 B8\_2 B8\_3 B8\_4 B8\_5 B8\_6 B8\_7 B8\_8 B8\_9 B8\_10 B8\_11 B8\_12 B9\_1 B9\_2  
B9\_3 B9\_4 B9\_5  
B9\_6 B9\_7 B9\_8 B9\_9 B9\_10 B9\_11 B9\_12 B9\_13 B9\_14 B9\_15 B9\_16 B9\_17 B9\_18 C1\_1  
C1\_2 C1\_3 C1\_4 C1\_5  
C1\_6 C4\_1 C4\_2 C4\_3 C4\_4 C4\_5 C4\_6 C4\_7 C4\_8 C4\_9 C4\_10 C4\_11 C4\_12 C5 C6 C7  
C10A C10B C10C C10D  
D1\_1 D1\_2 D1\_3 D1\_4 D1\_5 D1\_6 D4 D5 D9\_1 D9\_2 D11 E1A\_1 E1A\_2 E1A\_3 E1A\_4 E1A\_5  
E1A\_6 E1A\_7 E1A\_8  
E1A\_9 E1A\_10 E1A\_11 E1A\_12 E1A\_13 E1A\_14 E1A\_15 E1A\_16 E1A\_17 E1A\_18 E1A\_19  
E1A\_20 E1A\_21 E1A\_22  
E1A\_23 E1A\_24 E1A\_25 E1A\_26 E1A\_27 E1A\_28 E1A\_29 E1A\_30 E1A\_31 E1A\_32 E1A\_33  
E1A\_34 E1A\_35 E1A\_36  
E1B\_1 E1B\_2 E1B\_3 E1B\_4 E1B\_5 E1B\_6 E1B\_7 E1B\_8 E1B\_9 E1B\_10 E1B\_11 E1B\_12  
E1B\_13 E1B\_14 E1B\_15  
E1B\_16 E1B\_17 E1B\_18 E1B\_19 E1B\_20 E1B\_21 E1B\_22 E1B\_23 E1B\_24 E1B\_25 E1B\_26  
E1B\_27 E1B\_28 E1B\_29  
E1B\_30 E1B\_31 E1B\_32 E1B\_33 E1B\_34 E1B\_35 E1B\_36 E2\_1 E2\_2 F1 F2\_1 F2\_2 F2\_3  
F2\_4 F2\_5 F2\_6 F3A F3B  
F4\_1 F4\_2 F4\_3 F4\_4 F4\_5 F4\_6 F4\_7 F4\_8 F4\_9 F4\_10 F4\_11 F4\_12 F4\_13 G1 G3A\_1  
G3A\_2 G3A\_3 G3A\_4  
G3A\_5 G3A\_6 G3A\_7 G3A\_8 G3A\_9 G3A\_10 G3A\_11 G3A\_12 G3A\_13 G3A\_14 G3A\_15 G3A\_16  
G3A\_17 G3A\_18 G3A\_19  
G3B\_1 G3B\_2 G3B\_3 G3B\_4 G3B\_5 G3B\_6 G3B\_7 G3B\_8 G3B\_9 G3B\_10 G3B\_11 G3B\_12  
G3B\_13 G3B\_14 G3B\_15  
G3B\_16 G3B\_17 G3B\_18 G3B\_19 I1 I2 I6A\_1 I6A\_2 I6A\_3 I6A\_4 I6B\_1 I6B\_2 I6B\_3  
I6B\_4 J1\_1 J1\_2 J1\_3  
J2\_1 J2\_2 J2\_3 J2\_4 J2\_5 .

\* -----







\* 13. DESCRIPTIVES.

DESCRIPTIVES

```

FIELD B2 B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12 B9_1 B9_2
B9_3 B9_4 B9_5
    B9_6 B9_7 B9_8 B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16 B9_17 B9_18 C1_1
C1_2 C1_3 C1_4 C1_5
    C1_6 C4_1 C4_2 C4_3 C4_4 C4_5 C4_6 C4_7 C4_8 C4_9 C4_10 C4_11 C4_12 C5 C6 C7
C10A C10B C10C C10D
    D1_1 D1_2 D1_3 D1_4 D1_5 D1_6 D4 D5 D9_1 D9_2 D11 E1A_1 E1A_2 E1A_3 E1A_4 E1A_5
E1A_6 E1A_7 E1A_8
    E1A_9 E1A_10 E1A_11 E1A_12 E1A_13 E1A_14 E1A_15 E1A_16 E1A_17 E1A_18 E1A_19
E1A_20 E1A_21 E1A_22
    E1A_23 E1A_24 E1A_25 E1A_26 E1A_27 E1A_28 E1A_29 E1A_30 E1A_31 E1A_32 E1A_33
E1A_34 E1A_35 E1A_36
    E1B_1 E1B_2 E1B_3 E1B_4 E1B_5 E1B_6 E1B_7 E1B_8 E1B_9 E1B_10 E1B_11 E1B_12
E1B_13 E1B_14 E1B_15
    E1B_16 E1B_17 E1B_18 E1B_19 E1B_20 E1B_21 E1B_22 E1B_23 E1B_24 E1B_25 E1B_26
E1B_27 E1B_28 E1B_29
    E1B_30 E1B_31 E1B_32 E1B_33 E1B_34 E1B_35 E1B_36 E2_1 E2_2 F1 F2_1 F2_2 F2_3
F2_4 F2_5 F2_6 F3A F3B
    F4_1 F4_2 F4_3 F4_4 F4_5 F4_6 F4_7 F4_8 F4_9 F4_10 F4_11 F4_12 F4_13 G1 G3A_1
G3A_2 G3A_3 G3A_4
    G3A_5 G3A_6 G3A_7 G3A_8 G3A_9 G3A_10 G3A_11 G3A_12 G3A_13 G3A_14 G3A_15 G3A_16
G3A_17 G3A_18 G3A_19
    G3B_1 G3B_2 G3B_3 G3B_4 G3B_5 G3B_6 G3B_7 G3B_8 G3B_9 G3B_10 G3B_11 G3B_12
G3B_13 G3B_14 G3B_15
    G3B_16 G3B_17 G3B_18 G3B_19 I1 I2 I6A_1 I6A_2 I6A_3 I6A_4 I6B_1 I6B_2 I6B_3
I6B_4 J1_1 J1_2 J1_3
    J2_1 J2_2 J2_3 J2_4 J2_5 .

```

\* -----

\* 14. New variables

\* -----

```
INCLUDE FILE = "Data_TSVET_2014_new_variables.sps".
```

\* -----

\* 15. SAVE the cleaned data.

\* -----

```
SAVE OUTFILE = "D:\TSVET_2014\DATA\Data_TSVET_2014_cleaned_data.sav".
```

```
DATASET NAME TS2014 WINDOW=FRONT.
```

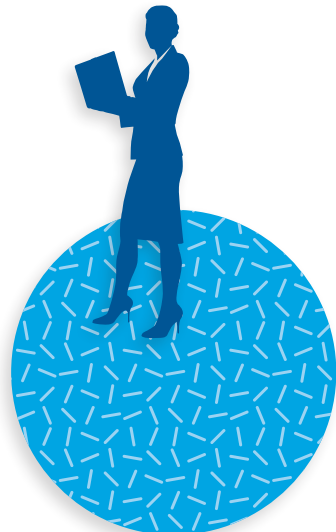
\* -----



.....

## ANNEX 5. Building of new variables (SPSS syntax)

```
* -----.  
* Data_TSVET_2014_new_variables.sps .  
* -----.  
  
*****.  
***** NEW VARIABLES *****.  
*****.  
  
* -----.  
* --New break variable: FIELDGENDER Field of study and gender.  
* -----.  
  
FREQUENCIES          FIELD I1.  
COMPUTE              FIELDGENDER = FIELD*10 + I1.  
VARIABLE LABELS     FIELDGENDER "Field of study and gender".  
RECODE              FIELDGENDER  
  (11=1)  
  (12=2)  
  (21=3)  
  (22=4)  
  (31=5)  
  (32=6)  
  (sysmis=-9).  
VALUE LABELS        FIELDGENDER  
  1 Hum-M  
  2 Hum-F  
  3 Sci-M  
  4 Sci-F  
  5 Eng-M  
  6 Eng-F.  
MISSING VALUES     FIELDGENDER (-9 thru -1).  
FORMATS             FIELDGENDER (F4.0).  
FREQUENCIES         FIELDGENDER.
```





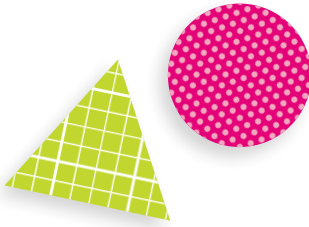
Extract from SPSS OUTPUT

| FIELDGENDER Field of study and gender |              |           |         |               |                    |
|---------------------------------------|--------------|-----------|---------|---------------|--------------------|
|                                       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid                                 | 1 Hum-M      | 151       | 11.2    | 11.2          | 11.2               |
|                                       | 2 Hum-F      | 345       | 25.6    | 25.6          | 36.8               |
|                                       | 3 Sci-M      | 129       | 9.6     | 9.6           | 46.4               |
|                                       | 4 Sci-F      | 114       | 8.5     | 8.5           | 54.9               |
|                                       | 5 Eng-M      | 445       | 33.0    | 33.1          | 88.0               |
|                                       | 6 Eng-F      | 162       | 12.0    | 12.0          | 100.0              |
|                                       | Total        | 1,346     | 99.9    | 100.0         |                    |
| Missing                               | -9 no answer | 1         | .1      |               |                    |
| Total                                 |              | 1,347     | 100.0   |               |                    |

```

* -----
* Classification of metric variables
* -----
* -----
* C7_CL Duration of job search
* -----
COMPUTE C7_CL = VALUE ( C7 ) .
APPLY DICTIONARY FROM *
/SOURCE VARIABLES = C7
/TARGET VARIABLES = C7_CL
/VARINFO LEVEL MISSING FORMAT VARLABEL VALLABELS = REPLACE .
FREQUENCIES C7_CL .
RECODE C7_CL
(1 THRU 3 = 1)
(4 THRU 6 = 2)
(7 THRU 9 = 3)
(10 THRU 12 = 4)
(13 THRU HI = 5) .
ADD VALUE LABELS C7_CL
1 "1 to 3 months"
2 "4 to 6 months"
3 "7 to 9 months"
4 "10 to 12 months"
5 "More than 12 months"
.
FREQUENCIES C7_CL .

```



### Extract from SPSS OUTPUT

| C7_CL Duration of job search |                            |           |         |               |                    |
|------------------------------|----------------------------|-----------|---------|---------------|--------------------|
|                              |                            | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid                        | 1 1 to 3 months            | 310       | 23.0    | 38.8          | 38.8               |
|                              | 2 4 to 6 months            | 240       | 17.8    | 30.1          | 68.9               |
|                              | 3 7 to 9 months            | 84        | 6.2     | 10.5          | 79.4               |
|                              | 4 10 to 12 months          | 85        | 6.3     | 10.7          | 90.1               |
|                              | 5 More than 12 months      | 79        | 5.9     | 9.9           | 100.0              |
|                              | Total                      | 798       | 59.2    | 100.0         |                    |
| Missing                      | -9 No answer               | 110       | 8.2     |               |                    |
|                              | -8 Filtered; no job search | 439       | 32.6    |               |                    |
|                              | Total                      | 549       | 40.8    |               |                    |
| Total                        |                            | 1,347     | 100.0   |               |                    |

\* -----  
 \* Example of building index variables.  
 \* -----

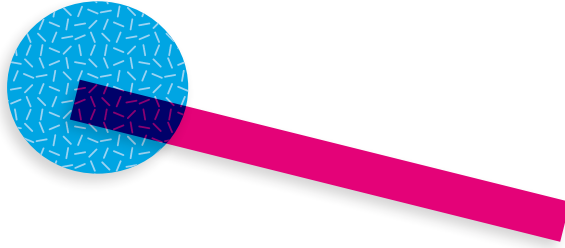
### B8exploratory factor analysis

FACTOR

```

/VARIABLES
  B8_1 B8_2 B8_3 B8_4 B8_5 B8_6
  B8_7 B8_8 B8_9 B8_10 B8_11 B8_12
/MISSING PAIRWISE
/ANALYSIS
  B8_1 B8_2 B8_3 B8_4 B8_5 B8_6
  B8_7 B8_8 B8_9 B8_10 B8_11 B8_12
/PRINT UNIVARIATE INITIAL EXTRACTION ROTATION FSCORE
/FORMAT SORT BLANK(.45)
/EXTRACTION PC
/CRITERIA MINEIGEN(1) ITERATE(50)
/ROTATION VARIMAX
/METHOD=CORRELATION.
  
```





### Extract from SPSS OUTPUT

| Rotated Component Matrix <sup>a</sup>                            |           |      |      |      |
|--|-----------|------|------|------|
|  | Component |      |      |      |
|  | 1         | 2    | 3    | 4    |
| B8_8 Project and problem-based learning                          | .681      |      |      |      |
| B8_9 Direct acquisition of work experience                       | .657      |      |      |      |
| B8_10 Out-of-class communication between students and staff      | .606      |      |      |      |
| B8_12 Detailed regular assessment of academic progress           | .598      |      |      |      |
| B8_3 Attitudes and socio-communicative skills                    | .504      |      |      |      |
| B8_5 Regular class attendance                                    |           | .691 |      |      |
| B8_6 Teacher as the main source of information and understanding |           | .671 |      |      |
| B8_11 Writing a thesis   |           | .540 |      |      |
| B8_7 Freedom to choose courses and areas of specialisation       |           |      | .682 |      |
| B8_4 Independent learning  |           |      | .626 |      |
| B8_2 Theories, concepts or paradigms                             |           |      |      | .772 |
| B8_1 Facts and instrumental knowledge                            | .506      |      |      | .596 |

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

### B9 exploratory factor analysis

FACTOR

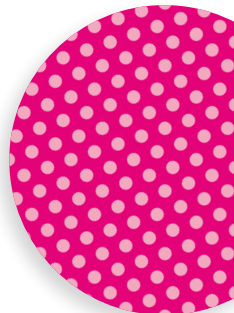
```

/VARIABLES
  B9_1 B9_2 B9_3 B9_4 B9_5 B9_6 B9_7 B9_8
  B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16
  B9_17 B9_18
/MISSING PAIRWISE
/ANALYSIS
  B9_1 B9_2 B9_3 B9_4 B9_5 B9_6 B9_7 B9_8
  B9_9 B9_10 B9_11 B9_12 B9_13 B9_14 B9_15 B9_16
  B9_17 B9_18
/PRINT UNIVARIATE INITIAL EXTRACTION ROTATION FSCORE
/FORMAT SORT BLANK(.45)
/EXTRACTION PC
/CRITERIA MINEIGEN(1) ITERATE(50)
/ROTATION VARIMAX
/METHOD=CORRELATION.
  
```



**Extract from SPSS OUTPUT**

| <b>Rotated Component Matrix<sup>a</sup></b>                                 |                  |          |          |          |          |
|---|------------------|----------|----------|----------|----------|
|   | <b>Component</b> |          |          |          |          |
|   | <b>1</b>         | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| B9_4 Variety of courses offered   | .824             |          |          |          |          |
| B9_7 Opportunity to choose courses and areas of specialisation              | .737             |          |          |          |          |
| B9_5 Design of degree program   | .604             |          |          |          |          |
| B9_3 Course content of major  | .589             |          |          |          |          |
| B9_9 Teaching quality   | .470             |          |          |          |          |
| B9_2 Assistance/advice for your final examination                           |                  | .761     |          |          |          |
| B9_1 Academic advice offered in general                                     |                  | .721     |          |          |          |
| B9_8 Practical emphasis of teaching and learning                            |                  | .519     |          |          |          |
| B9_6 Testing/grading system   | .474             | .490     |          |          |          |
| B9_16 Equipment and stocking of libraries                                   |                  |          | .804     |          |          |
| B9_17 Supply of teaching material   |                  |          | .787     |          |          |
| B9_18 Quality of technical equipment (e.g. PC, measuring instruments, etc.) |                  |          | .710     |          |          |
| B9_10 Chances to participate in research projects                           |                  |          |          | .851     |          |
| B9_11 Research emphasis of teaching and learning                            |                  |          |          | .793     |          |
| B9_12 Provision of work placements and other work experience                |                  |          |          | .509     |          |
| B9_14 Contacts with fellow students   |                  |          |          |          | .847     |
| B9_15 Chance for students to have an impact on university policies          |                  |          |          |          | .558     |
| B9_13 Opportunity of out-of-class contacts with teaching staff              |                  | .529     |          |          | .530     |
| Extraction Method: Principal Component Analysis.                            |                  |          |          |          |          |
| Rotation Method: Varimax with Kaiser Normalization.                         |                  |          |          |          |          |
| a. Rotation converged in 6 iterations.                                      |                  |          |          |          |          |





```
* -----  
* Study provisions: Practice - 6 Items  
* -----
```

```
B8_8 Project and problem-based learning  
B8_9 Direct acquisition of work experience  
B8_10 Out-of-class communication between students and staff  
B8_12 Detailed regular assessment of academic progress  
B8_3 Attitudes and socio-communicative skills  
B8_1 Facts and instrumental knowledge
```

```
COMPUTE ST_PRACTICE = MEAN.2 (B8_8, B8_9, B8_10, B8_12, B8_3, B8_1).
```

```
* -----  
* Alpha 6.7 .
```

```
RELIABILITY
```

```
/VARIABLES= B8_8, B8_9, B8_10, B8_12, B8_3, B8_1  
/SCALE('ST_PRACTICE') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE HOTELLING TUKEY  
/SUMMARY=TOTAL  
/ICC=MODEL(MIXED) TYPE(CONSISTENCY) CIN=95 TESTVAL=0.
```

```
* -----  
* Study provisions: Content - 5 Items  
* -----  
*
```

```
B9_4 Variety of courses offered  
B9_7 Opportunity to choose courses and areas of specialisation  
B9_5 Design of degree program  
B9_3 Course content of major  
B9_9 Teaching quality .
```

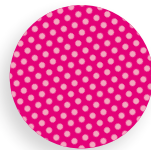
```
COMPUTE ST_CONTENT = MEAN.2 (B9_4, B9_7, B9_5, B9_3, B9_9).
```



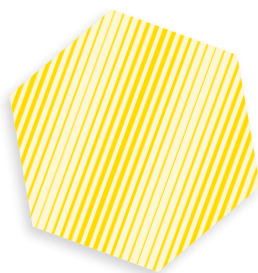
```
* -----
* Alpha 7.6.
RELIABILITY
/VARIABLES= B9_4, B9_7, B9_5, B9_3, B9_9
/SCALE('Content') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE HOTELLING TUKEY
/SUMMARY=TOTAL
/ICC=MODEL(MIXED) TYPE(CONSISTENCY) CIN=95 TESTVAL=0.

* -----
* Study provisions: Student centered -
B9_2 Assistance/advice for your final examination
B9_1 Academic advice offered in general
B9_8 Practical emphasis of teaching and learning
B9_6 Testing/grading system
B9_13 Opportunity of out-of-class contacts with teaching staff
.
COMPUTE ST_STUDENT = MEAN.2 (B9_2, B9_1, B9_8, B9_13, B9_6).
* Alpha 7.4.
RELIABILITY
/VARIABLES= B9_2, B9_1, B9_8, B9_13, B9_6
/SCALE('ST_STUDENT') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE HOTELLING TUKEY
/SUMMARY=TOTAL
/ICC=MODEL(MIXED) TYPE(CONSISTENCY) CIN=95 TESTVAL=0.

VARIABLE LABELS
  ST_PRACTICE "Study conditions: practice oriented"
  ST_CONTENT  "Study conditions: content/quality"
  ST_STUDENT  "Study conditions: student centered".
VALUE LABELS
  ST_PRACTICE ST_CONTENT ST_STUDENT
  1 "Very low/bad"
  5 "Very high/good" .
```







FORMATS

ST\_PRACTICE ST\_CONTENT ST\_STUDENT (F4.1) .

RECODE

ST\_PRACTICE ST\_CONTENT ST\_STUDENT (sysmis=-9) .

MISSING VALUES

ST\_PRACTICE ST\_CONTENT ST\_STUDENT (-9 THRU -1) .

FREQUENCIES

ST\_PRACTICE ST\_CONTENT ST\_STUDENT .

DESCRIPTIVES

ST\_PRACTICE B8\_8, B8\_9, B8\_10, B8\_12, B8\_3, B8\_1

ST\_CONTENT B9\_4, B9\_7, B9\_5, B9\_3, B9\_9

ST\_STUDENT B9\_2, B9\_1, B9\_8, B9\_13, B9\_6 .

\* Examples of further analysis

\* -----

CORRELATIONS

ST\_PRACTICE ST\_CONTENT ST\_STUDENT .

\* -----

CORRELATIONS

E1A\_1 E1A\_2 E1A\_3 E1A\_4 E1A\_5 E1A\_6 E1A\_7 E1A\_8 E1A\_9 E1A\_10 E1A\_11 E1A\_12 E1A\_13  
E1A\_14 E1A\_15

E1A\_16 E1A\_17 E1A\_18 E1A\_19 E1A\_20 E1A\_21 E1A\_22 E1A\_23 E1A\_24 E1A\_25 E1A\_26  
E1A\_27 E1A\_28 E1A\_29

E1A\_30 E1A\_31 E1A\_32 E1A\_33 E1A\_34 E1A\_35 E1A\_36

WITH

ST\_PRACTICE ST\_CONTENT ST\_STUDENT .

\* -----

CORRELATIONS

C6 C7 D11 E2\_1 E2\_2 F1 F3A F3B

G1

G3B\_1 G3B\_2 G3B\_3 G3B\_4 G3B\_5 G3B\_6 G3B\_7 G3B\_8 G3B\_9 G3B\_10

G3B\_11 G3B\_12 G3B\_13 G3B\_14 G3B\_15

G3B\_16 G3B\_17 G3B\_18 G3B\_19

WITH

ST\_PRACTICE ST\_CONTENT ST\_STUDENT .

\* -----



```
* SKILL MATCH and study conditions.  
* without JAPAN.  
REGRESSION  
  /DESCRIPTIVES MEAN STDDEV CORR SIG N  
  /MISSING LISTWISE  
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP  
  /CRITERIA=PIN(.05) POUT(.10)  
  /NOORIGIN  
  /DEPENDENT E2_1  
  /METHOD=ENTER ST_PRACTICE ST_CONTENT ST_STUDENT.
```

```
* SKILL MATCH and study conditions.  
* without JAPAN.  
REGRESSION  
  /DESCRIPTIVES MEAN STDDEV CORR SIG N  
  /MISSING LISTWISE  
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP  
  /CRITERIA=PIN(.05) POUT(.10)  
  /NOORIGIN  
  /DEPENDENT E2_1  
  /METHOD=STEPWISE  
B8_1 B8_2 B8_3 B8_4 B8_5 B8_6 B8_7 B8_8 B8_9 B8_10 B8_11 B8_12  
B9_1 to B9_18.
```

```
* SKILL MATCH and study conditions.  
* without JAPAN.  
REGRESSION  
  /DESCRIPTIVES MEAN STDDEV CORR SIG N  
  /MISSING LISTWISE  
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP  
  /CRITERIA=PIN(.05) POUT(.10)  
  /NOORIGIN  
  /DEPENDENT F1  
  /METHOD=ENTER ST_PRACTICE ST_CONTENT ST_STUDENT.
```



## HOWTO OBTAIN EU PUBLICATIONS

### Free publications:

- one copy:  
via EU Bookshop (<http://bookshop.europa.eu>);
- more than one copy or posters/maps:  
from the European Union's representations ([http://ec.europa.eu/represent\\_en.htm](http://ec.europa.eu/represent_en.htm));  
from the delegations in non-EU countries ([http://eeas.europa.eu/delegations/index\\_en.htm](http://eeas.europa.eu/delegations/index_en.htm));  
by contacting the Europe Direct service ([http://europa.eu/europedirect/index\\_en.htm](http://europa.eu/europedirect/index_en.htm)) or calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (\*).

(\*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

### Priced publications:

- via EU Bookshop (<http://bookshop.europa.eu>).



This guide is a part of the ETF, ILO and Cedefop series of guides on skills anticipation and matching. All the guides follow a common structure, although they vary in level of detail, technical content and case studies. The ETF, Cedefop and the ILO worked closely together to develop the guides, usually with one agency/organisation taking the lead and the others providing inputs, case studies, comments and reviews. All guides have undergone extensive validation and peer review; they were also discussed in detail in international expert seminars in which academic representatives, anticipation and matching experts, and potential end-users from across the world provided comments and feedback on content and usability. Experts and staff of the three organisations also peer reviewed the guides before their publication.

This volume covers development and carrying out of tracer studies and aims to contribute to the improvement of education in TVET and higher education through high quality graduate surveys or tracer studies. The key objective of such studies is to identify the relevance of education/training for transition to a job and further vocational career in the first years after graduating.

Many countries are experiencing growing demand for tracer studies due to requirements of accreditation and quality management. Education institutions are often forced by law to implement regular tracer studies and there is demand from donor agencies for empirical evidence about the relevance of the education/training they sponsor.

The main audience for this guide is those in education institutions who are going to organise and implement their own tracer studies (institutional tracer studies). It is also targeted at users in various categories: policy and decision-makers; research centres and expert networks involved/engaged in carrying out tracer studies for clients; and associations and networks with interest in evidence offered by tracer studies. The reader will obtain detailed guidance on how to design a tracer study, develop a questionnaire and how to carry out the data analysis, without being an expert in survey methodology.

.....