

Quality Criteria of Graduate Tracer Studies – A Proposal for Self-Assessments

INDOTRACE workshop
Sanur/Bali, 27 November 2015

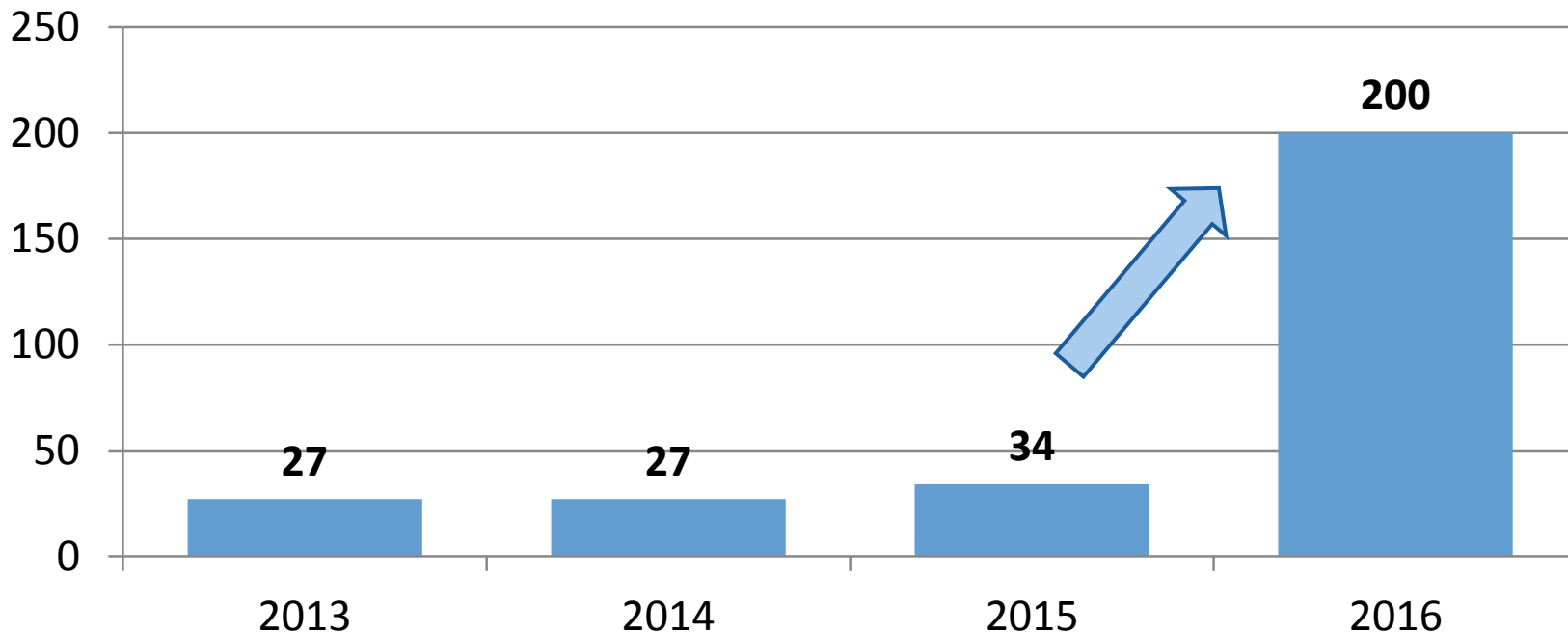
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Tracer Studies of Institutions of Higher Education in Indonesia 2013-2016 (grants)

2

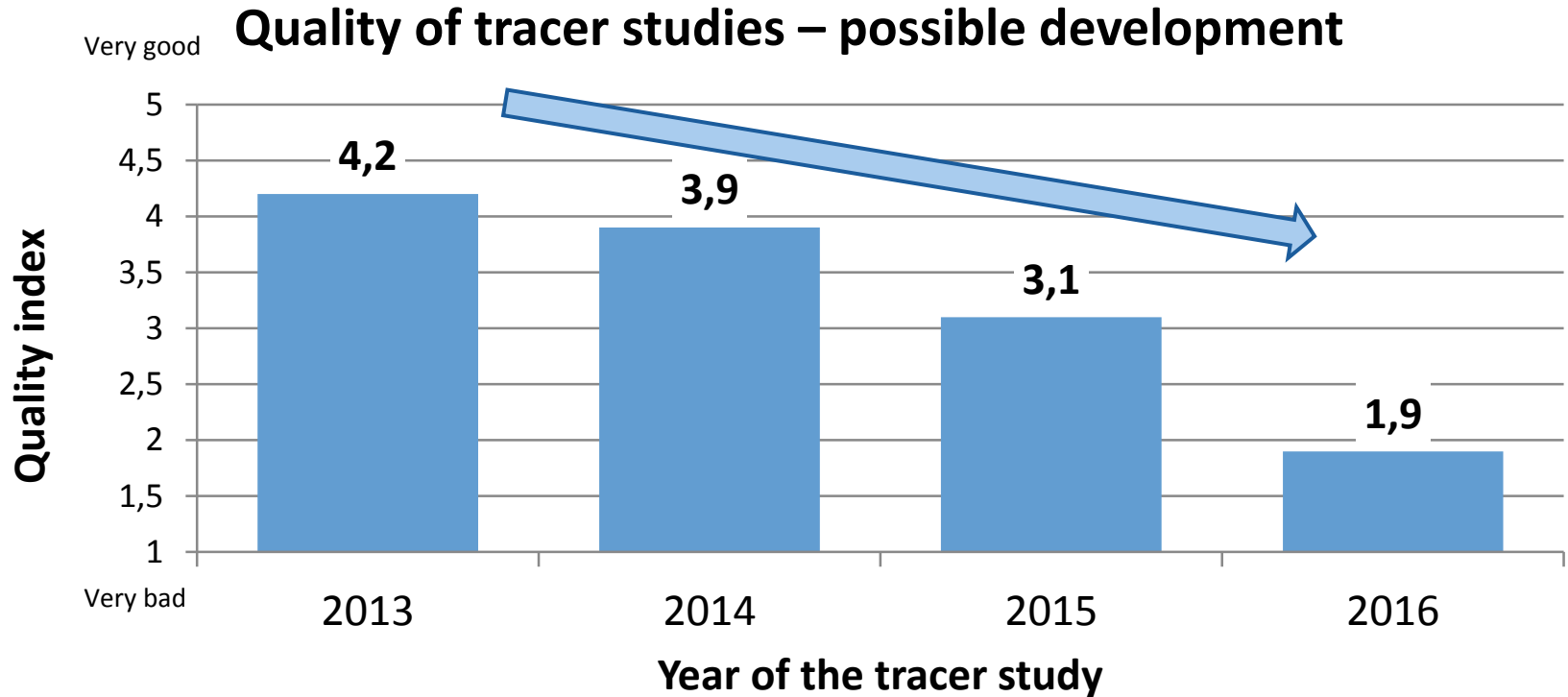
Harald Schomburg: Quality Criteria of Graduate Tracer Studies - A Proposal for Self-Assessments

Number of institutions of higher education



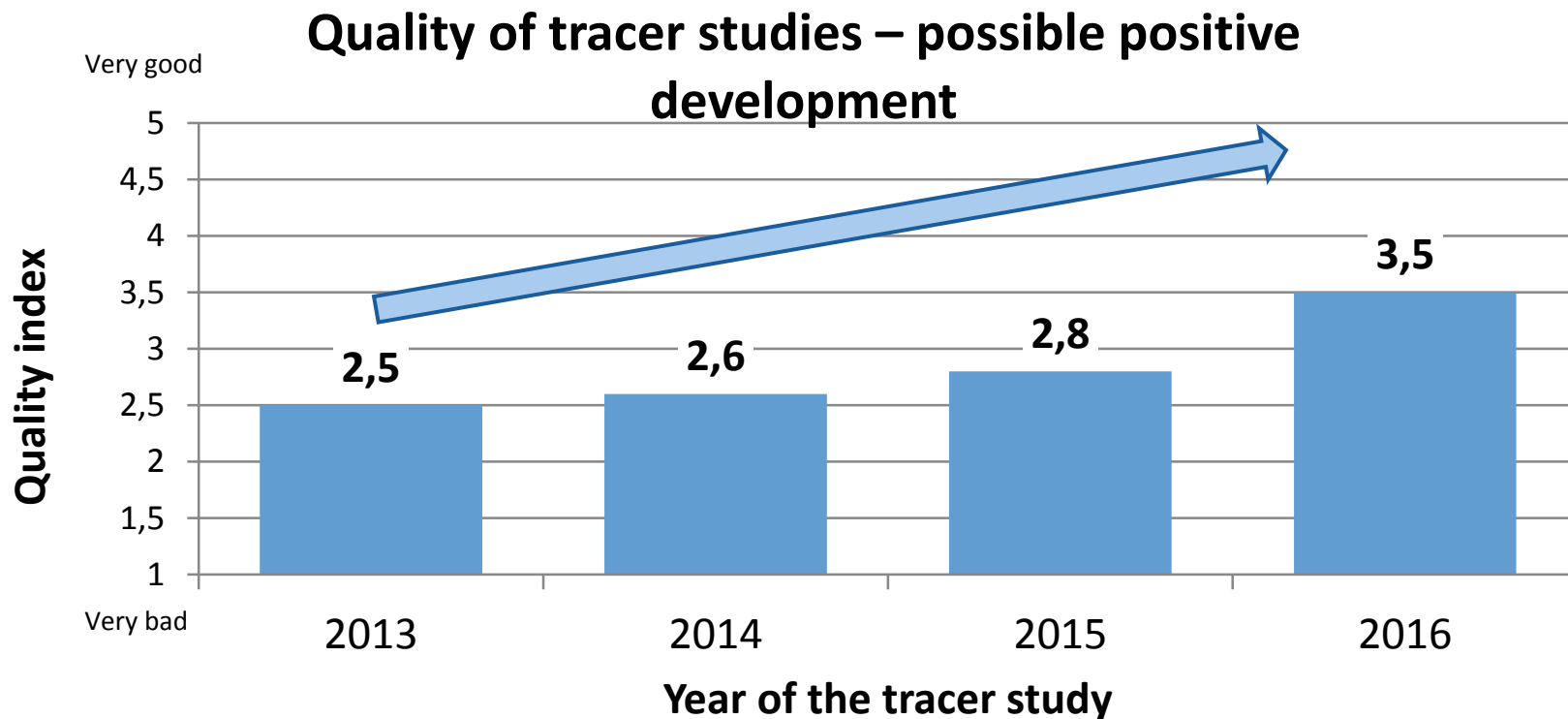
Possible Decline of the Quality of Tracer Studies of Institutions of Higher Education in Indonesia 2013-2016 (fictive quality index)

3



Possible Growing Quality of Tracer Studies of Institutions of Higher Education in Indonesia 2013-2016 (fictive quality index)

4



Quality - a Multi-Dimensional Concept

- Methodology
- Efficiency
 - Costs (cost per response)
 - Duration
 - Regularity
- Relevance
 - Usability of results
 - Dissemination activities
 - Accreditation criteria

Methodology: Measurement and Representation

The content of the
questionnaire

This side is about what
is being measured

Measurement

Construct

Measurement

Response

Edited
Response

Survey
Statistic

Representation

Target
Population

Sampling
Frame

Sample

Respondents

Postsurvey
Adjustments

The process of the
survey

This side is about who
is being measured

Figure 2.2 Survey lifecycle from a design perspective.

12/31/12

Quality: Requirements for a Good Tracer Study

- Well established methodology standards
 - Reliability
 - Validity
- The overlooked efficiency dimension
 - What does it cost to get a response from one graduate?
- The overlooked relevance dimension
 - Are the results usable for curriculum development?

Proposal: Ten Aspects of Quality

1. Objectives of the Tracer Study
2. Address database
3. Quality of the questionnaire
4. Survey procedures
5. Data cleaning
6. Data analysis
7. Quality of reports
8. Dissemination activities
9. Efficiency
10. Relevance

1. Self-assessment of the Objectives

1 To what extent do you agree with the following sentences regarding the objectives of the Tracer Study?						
	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
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
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The objectives outlined in the report are explicit related to research literature
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
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
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In general: The objectives of the Tracer Study have a high quality

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

2. Self-assessment of the Address Database

2 How do you rate the quality of the address database of the Tracer Study?						
	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"/>	Completeness of addresses regarding the target population
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Information regarding the update status of the addresses
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Information about all update activities
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Information about the process of the field phase
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)
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The address database in general

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

3. Self-assessment of the Questionnaire

3 How do you rate the following aspects of the questionnaire of the Tracer Study? If not applicable/not existent use the value 1 = very bad.

	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"/>	The pre-test of the questionnaire		
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The documentation of the sources of the questions in the questionnaire		
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The formatting of the questionnaire		
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The justification of the questions		
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The length of the questionnaire		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The quality of the questionnaire in general		

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

4. Self-assessment of the Survey Procedures

4 How do you rate the survey procedures of the Tracer Study?
If not applicable/not existent use the value 1 = very bad.

	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"/>	Sampling (selection of target population of the survey)
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Response rate achieved
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Response rate calculation
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Documentation of activities to contact the graduates
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test of representativity of participating graduates
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Survey procedures in general

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

5. Self-assessment of the Data Cleaning

5 How do you rate the data cleaning procedures of the Tracer Study? If not applicable/not existent use the value 1 = very bad.

	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"/>	Coding of open answers
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coding of half-open answers ("Other")
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Documentation of data (codebook)
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plausibility checks
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Correction of the data errors
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data cleaning in general

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

6. Self-assessment of the Data Analysis

6 How do you rate the data analysis of the data of the Tracer Study? If not applicable/not existent use the value 1 = very bad.

	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"/>	Descriptive analysis of the whole population		
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Descriptive comparison of groups (tables)		
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)		
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Multivariate analysis (like regression analysis)		
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Causal analysis with LISREL, AMOS or other software		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The data analysis in general		

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

7. Self-assessment of the Reports

7 How do you rate the reports of the Tracer Study? If not applicable/not existent use the value 1 = very bad.

	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"/>		Method report	
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Tables report	
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Presentations (e.g. powerpoint)	
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Scientific reports/publications	
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Recommendations related to the data/results	
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		The reports in general	

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

What are Results?

- Methodological results → **Method report**
 - The questionnaire
 - Response rate
 - Representation
- Data Analysis → **Table report**
 - The raw data
 - Simple descriptive findings (frequencies and tables)
 - Multivariate analysis (mainly comparison of groups and regression analysis)
- Interpretation of the results → **Main report**
 - Critical discussion of the methodology
 - Use of external data (like educations statistics, labor market statistics)
 - Comparison with other studies
 - Possible recommendations

8. Self-assessment of the Dissemination Activities

8 How do you rate the dissemination activities? If not applicable/not existent use the value 1 = very bad.

	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"/>	Information/reports to the management of the institution
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Information/reports to staff of the TVET/HE institution
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mass media information
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use of the results for improvement of the curriculum
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use of the results for improvement of the study conditions and provisions at the TVET/HE institution
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The dissemination activities in general

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

9. Self-assessment of the Efficiency

9 How do you rate the efficiency of the tracer study?
If no information are provided use the value 1 = very high.

	Very high				Very low	
	1	2	3	4	5	
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The costs of the address database
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The costs of updating the addresses
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The costs to contact the graduates and collect the data
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The costs to enter the data
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The costs of data analysis
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The efficiency in general

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. Self-assessment of the Relevance

10 How do you rate the relevance of the results?
If not applicable/not existent use the value 1 = very bad.

	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"/>	The usability for evaluation of the study programme
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The usability for accreditation
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The usability for curriculum development
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The usability for student or graduate counselling
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The usability for other aspects of development of the institution
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The relevance of the tracer study in general

Maximum: 30 point

<u>Very bad</u>						Bad						Good						<u>Very good</u>											
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

The Simple and Push Approach: TVET Tracer Studies as a School Management Tool?

REGIONAL TVET CONFERENCE 2014

3. Challenges & Lessons Learnt

Ensuring TVET Quality
Preparing for AEC 2015

1 - 2 April 2014,
Jakarta - Indonesia

- An encouraging system for tracer studies implementation by the TVET institutes is needed.

Use of the tracer studies as **school management** tool shall be included in school assessment/accreditation

- Tracer studies should use a simple data collection method encouraging the alumni to participate in the tracer studies

Attached the implementation of tracer studies in activities or platform interesting for the alumni: job fair activities, home-coming reunion, job placement website, etc.

- Keep the instrument and process as simple as possible

What we want is not always what we need. Measure only what needs to be measured

W. Wulandari, SED-TVET GIZ Indonesia

Source: <https://www.regional-tvet-conference-indonesia.org/en/topic/20.downloads.html>, Wayu Wulandiri

ITB Bandung – Indonesia:

Good Example of Regular and Fast Publication of Results

The screenshot displays the ITB Career Center website's 'Tracer Study' section. At the top right, the logo for 'ITB Career Center LEMBAGA KEMAHASISWAAN' is visible. The main navigation bar includes 'Tracer Study', 'Kuesioner', 'Kontak', 'Laporan', 'Seminar', and 'Tentang'. Below this, a 'Report' section is highlighted. Two reports are listed:

- 2014 Tracer Study ITB 2014 Summary**: The summary states that the 2014 Tracer Study was conducted on the 2007 alumni cohort. It involved 2268 respondents (80.29% of the total 2828 alumni). The results provide insights into the current job market, the relationship between higher education and employment, ideal job conditions according to 2007 alumni, and the status of 2007 alumni during their studies and their connection with the ITB campus. A 'download (pdf)' link is provided.
- 2013 Tracer Study ITB 2013 Summary**: The summary notes that the 2013 Tracer Study was conducted on the 2006 alumni cohort. It received 1902 responses (72% of the total 2648 alumni). This represents a record for ITB, as it is the first time the university has achieved a 72% response rate in its Tracer Study. A 'download (pdf)' link is also provided.

Source: <https://karir.itb.ac.id/tracerstudy/report>

- **2 Million Euros for the central support unit**



Tracking graduate careers in Hungary

Tracking system at national and HEI levels

National level

- **support HEI projects: provide the standard of tracking systems, helpdesk, conferences, handbooks**
 - **central services: national surveys, database, communication (web)**
- Educatio Nonprofit Company**
~ 2M euro,
(15.05.2008-15.10.2010)

Institutional level

Establish or improve graduate tracking system: surveys, institutional background, external and internal communication

30 projects of HEIs, total 16M euro
(01.2010-12.2010)

- **30 institutions**
- **16 Million Euros**



Low Budget Example Guatemala (UNITRACE): Successful Methodology

23

The experience of Graduates Tracer Studies at Universidad del Valle de Guatemala (UVG), Guatemala, Central America.



Thanks for your attention!



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UNITRACE PROJECT - GUATEMALA - OCTUBRE 2012

Conclusions

- It is possible to conduct a Graduated Tracer Study using automation methodologies, integrating systems and using a low budget if it's well planned.
- A permanent methodology has been developed in this topic at UVG.
- It is possible to use the methodology developed to do national studies.

Requirements of the Interpretation of Results

1. Critical reflection of the possibility of *biased results*;
2. *Comparison* of results with other studies;
3. *Comparison* of results from similar question in the tracer study;
4. Consideration of information about the *educational context*, which are not gained through the study (e.g. information about the institution and the study programme/training course);
5. Consideration of information about the *labour market*, which are not gained through the study (e.g. information about unemployment, economic cycle, economic structure in a region);

- Selection bias: test of the representation of respondents;
- Item non-response: why are some questions not answered? Explanation of response behaviour.
- Drop-Out: why was questionnaire not completed? Explanation of response behaviour;
- Univariate (frequencies) and bivariate (two variables) data analysis is not sufficient;
- Most common: multiple regression analysis and structural equation modelling (SEM; LISREL or AMOS)

Biased Results?

- In the interpretation of the findings it should always be discussed whether the results might be influenced in a certain direction – not only by a random error
- To detect biased results a method report should contain precise and full information about the survey procedures
- Since it is almost impossible to correct biased results, the attempts to ensure that the sample of participating graduates represents the total population are crucial for the whole study
- A selection bias is always a danger in Tracer Studies with different methods of contacting the graduates

Appropriate Statistical Methods

- The “results” are always produced by selected statistical methods of the researcher
- There is no simple direct way from the data to “results”
 - Coding and recoding
 - Missing values
 - Aggregation
- To present simple statistics for the whole population (e.g. all graduates from one institution) is misleading
- There can be big differences between study programmes/training courses, gender, etc.

Statistical Significance and Importance of Findings

- The number of cases (graduates) should always be checked
 - The numbers should also be presented in tables to enable the reader to check the plausibility
- Do we have enough cases that a finding is not by chance?
- What minimum of cases do we expect?
- A statistical significant result might be not important
- It is not sufficient to write in a report that e.g. income differences between male and female graduates are “significant”; how big are the differences?
- 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.

Requirements for Meaningful Interpretations and Practical Relevance of Results of Tracer Studies

- Close cooperation between education experts and experts of data analysis (statistic)
- Method report – detailed documentation of survey procedures
- Test of representation of the sample
- Use of a professional tool for data analysis like SPSS, STATA or R (the use of EXCEL is not sufficient)

Open Questions

- Can Institutional Tracer Studies deliver relevant data to substitute a separate *National Tracer Study*?
- How to ensure *comparability* of Institutional Tracer Studies?
- Who collects the national data and is responsible for data quality?
- How to build a *system of Tracer Studies* which is flexible and relevant for the institutions and for researchers (and the Ministry of Education) at the same time?
- How to exchange systematically the experiences to improve the future Tracer Studies (building *a learning culture*)?

- The implementation of Institutional Tracer Studies is a long term perspective (5 to 10 years)
- Network approach of institutions (cooperation) helps
- A central (national) support unit is needed
 - Education research center (e.g. at university)
 - National monitor – national data base
 - Training, workshops and conferences
 - Publications, international contacts
- The „**Guide to anticipating and matching skills and jobs** “ (ETF, ILO and Cedefop 2014) – Volume 6, Harald Schomburg, *Carrying out Tracer Studies*

Thank you very much for your attention

Further information and tools:

Web site <http://ingradnet.org>

Harald Schomburg (2015): Carrying out tracer studies. In: ETF/CEDEFOP/ILO (eds.): Guide to anticipating and matching skills and jobs. Volume 6. Torino: ETF (in print).