Roland Löffler
Stig Helge Pedersen

Siru Korkala
Jostein Ryssevik

Vienna
May 2018

SCIENTIFIC MONITORING

APPLIED METHODS OF IMPACT ASSESSMENT

Final report TCA Showing and Identifying Impact of Erasmus+ on EU and National Level, Part II

Erasmus+

I. Introduction

Content of the report

An Expert group[1] under the lead of the Austrian Institute for Vocational Education and Research, on behalf of the OeAD as the Austrian National Agency for the Erasmus+ programme, has scientifically supported the first project phase of the development of a method for measuring the effects of Erasmus+ (using the example of the key action KA1 in the field of vocational education and training) within the scope of the Transnational Cooperation Activity -TCA - Showing and Identifying Impact of Erasmus+ on EU and National Level).[2] This report documents the major model results of the Sub-Model MIA-Q for the participating countries (Austria, Estonia, Finland, Hungary, Iceland, the Netherlands, Norway, Slovenia and Sweden) both on a transnational and national level. The model results are presented for the overall indicator and the sub-indicators. Furthermore the report also contains a comparative analysis in regard to selected socio-economic criteria.

Aims and objectives

The aim was to develop an impact model for Erasmus+, illustrating the effects of the programme for learners, teachers and trainers, educational institutions as well as society and economy of the European Union on the basis of quantitative and qualitative indicators. In an iterative process, this model was developed in the first step for KA1 (mobility) in the field of vocational training (VET).

General objectives of an impact model of Erasmus+ is to create a transparent target architecture and an instrument for an impact-oriented monitoring. A good model will support results-based management and further development of the programme.

The model refers to general goals and objectives of the EU and Erasmus+ laid down in the relevant guidelines. The indicators are tools to verify the achievement of these objectives. The issues chosen to be monitored by the model are: competence, employability, innovation, European citizenship and internationalisation, professional development and system improvement.

How to use the report: Meaningfulness, significance of the indicators, reliability and stability of data

The objective of the TCA (and this report) is to identify and to show the impact of Erasmus+ on EU and national level based on existing data. Of course, it is not possible to capture all the effects of the Erasmus+ mobility programmes at the level of individuals, participating educational institutions and at national and transnational level in a single model. Such activities can hardly be considered detached from other economic, systemic and cultural factors (such as the economic and labour market situation, the structure and governance of education systems, demographic and skills development at national and European level). Therefore, the participating National Agencies and experts have agreed to measure the impact in a first step based on participants' experience and feedback.

[1] Roland Löffler (Austria), Siru Korkala (Finland), Stig Helge Pedersen, Jostein Ryssevik (Norway)
[2] For a description of model (concept, methodology, indicators, statistical testing) see: Löffler, Roland et al. (2018). Scientific Monitoring „Applied Methods of Impact Assessment Final report TCA Showing and Identifying Impact of Erasmus+ on EU and National Level, Part I. Wien: öibf.

The model results presented in this report are - although they are numerical values - not to be interpreted in their absolute values, but in their relative relations to each other. The overall indicator and the sub-indicators indicate the level of effects (at the personal level of the participants or the participating institutions) for the years of participation in the programme examined. These indicators reflect participants' self-assessment of the issues raised and can be considered (due to high response rates) as a reliable measure of the individually perceived or expected effects of mobilities. The added value of the model lies on the one hand in the longitudinal comparison of indicators and on the other hand in the comparison between participating countries. When interpreting developments over time, or comparing indicators from participating countries, (national) framework conditions of programme implementation as well as peculiarities of educational systems must be taken into account. Country and socioeconomic variables are not used to highlight the differences in the "performance" of the programme, but rather to clarify the different levels of satisfaction and positive assessment of mobility. The present report will seek to provide guidance on this.

The database used has the following strengths and weaknesses:

- It is based on a large number of responses, both at the transnational level and at the level of the individual Member States (with the exception of Iceland)
- The return rate relative to the number of all mobilities is high
- The model results show high stability and consistency both over time and in terms of geographic distribution
- The answers show only a small dispersion, which is due to the five-part scale. A seven-part scaling of the answer options in the questionnaire would have resulted in a greater variance
- The long questionnaire with only obligatory questions leads to reporting fatigue which may influence the reliability of results

We have only limited knowledge about the implementation and administration of the survey in the participating countries.

II. Model results on a transnational level

I. Overall indicator

The calculations are based on the responses of 59.577 participants (including 50.042 learners and 9.535 staff). The overall indicator of MIA-Q for the participating countries, based on the participants' surveys of learners and staff for the years 2014 to 2016 is 3.9. The range of underlying sub-indicators for the six selected topics ranges from 3.7 (European Citizenship and Internationalization) to 4.2 (Competence).

Figure 1: Programme score and indicator score, all participating countries (2014-2016)

Source: Database "MIA-Q", Status of the model: November 2018

Thus, both the overall indicator and the sub-indicators are clearly above average and reflect satisfaction among the participants and (in their estimation) an above-average positive effect of the mobilities on the mentioned topics. The impact of mobilities on their own development and (in terms of participating staff) the development of the sending institutions is highly appreciated.

The effect is particularly high in the area of the participants´ competences, and above all in the field of personal and social skills (Competence: 4.2; Employability: 4.1; Professional development: 4.0).

It turns out that those indicators that are based primarily on learner survey data tend to have higher scores than those of staff. This may have several causes: Firstly, the teachers and support staff seem to reflect more critically on the mobilities and the resulting effects, and secondly, they can draw on a wealth of experience. Learners (usually young people up to 19 years of age) often are abroad for the first time and rate this exceptional event as more positive. In addition, the (expected) effects on their further education and employment career are greater. Finally, it may also be related to the fact that learner mobility programmes can be tailored more to the needs of young people. Teachers or support staff members often have to find their position in the host organisation first.

Comparative analysis in regard to countries

Figure 2: Programme score and indicator score, all participating countries (2014-2016)

Source: Database “MIA-Q”, Status of the model: November 2018

A detailed analysis of the country results will be made in separate country reports, which will also address the specificities of programme implementation, VET systems, participating persons and institutions.

For an interpretation of these data various facts have to be taken into account:

- The absolute number of participants: the smaller the number of underlying answers, the more likely "outliers" play a role in the overall result. The larger the number of participants, the lower the influence of deviant answers. As a result, the Netherlands, which provides the greatest number of participants, shows the lowest deviation of the overall indicator from 2014 to 2016 in a country comparison.
- The socio-demographic composition of the participants: the gender proportions, the age structure, but also the participation of foreigners in the mobility programmes may influence the results.
- General response to surveys: Experts point out that people from different countries have different attitudes in interviews. In some countries, respondents may be more reluctant to make very positive assessments. Categories like "very satisfied", "very good", "strongly agree" are used less often, while in other countries respondents may be more likely to avoid very negative answers.
- Representativeness of the participants in terms of the potential population: the results depend on which part of the potential people eligible to participate actually participate in mobility programmes. In the case of pupils in particular, this also depends on the selection by the teachers (that is, whether students with above-average giftedness are selected for mobility programmes, or whether teachers wish to make it possible for all pupils of a class group to attend or want to support disadvantaged students in particular). The willingness of the sending institutions to allow pupils, apprentices or teaching staff to participate in mobility programmes also plays a crucial role. In addition, institutional framework conditions also influence the extent of participation.
- System inherent factors (such as the different implementation of mobility programmes by the participating National Agencies in regard to the duration of mobilities) can only be analysed at national level.

Nevertheless, the country results show that the Erasmus+ mobility in VET is appreciated in all participating countries and that participants think that the participation in mobilities effects their development (and the development of their sending institution) in a positive way.

II. Results for main topics

The MIA Q model aims to demonstrate the impact of Erasmus+ VET mobility. The model measures the effects at the level of thematic areas. The following are some key findings for the six main topics.

Competence

One of the core goals of European strategies (and thus the Erasmus+ education initiative) is the further development of the competences of the European population, especially of the Youth.

In the model MIA Q, the topic “competence” summarizes aspects of the effects of mobilities on the linguistic, analytical, social and personal competencies of the participating learners..

For all analysed years, the indicator for competence is 4.2 (on a 5-part scale) in the transnational perspective and points to a positive impact of the mobility programmes on the self-assessment of the learner's own competence development. Participants stated that thanks to the mobility experience they have expanded their own horizon, are more open-minded and curious about new challenges, that they are more able to adapt to new situations and learned better to work in teams.

This is true for all participating countries: model results show that in all countries participants think that there is a positive impact of mobilities on their competences with scores ranging from 4.1 to 4.5. This applies equally to women and men as well as to younger and older participants. For persons who have used comparatively longer mobility, the assessment of the positive effect of the stay abroad on the development of their competences is higher than for those whose mobility was shorter (4.2 vs. 4.0).

In summary, participants in mobility programmes in all years and across borders can see tangible added value in the development of their competence profiles, especially in areas of key competences (social and personal skills).

Employability

Mobility programmes also aim to increase the employability of participants. Therefore, the impact analysis devotes a separate thematic area to this goal. It examines aspects of future employment opportunities at home and abroad, the areas of activity and career prospects.

In general, the effects on the (future) employability are rated positively by the participating learners (average across all countries and years: 4.1). They think that they have better opportunities for internships or jobs in their home country and their chances to get a new or better job have increased. They also have clearer ideas about their professional career aspirations and goals and think to be better capable of taking over work tasks with high responsibility.

These assessments are shared by participants from all countries: the highest estimates of positive effects are found in Hungary, Estonia and Slovenia, but in no country the indicator is below 4 (on a five-part scale). In countries such as Austria, Norway, Finland and the Netherlands, participants are convinced of the positive effects of mobility on employability as well. The longer the mobility takes, the higher the effect on employability.

Innovation

Innovation is a major driver of the positive development of the European economy. Therefore, a number of measures are devoted to this objective in European strategies. The framework of the impact analysis of mobilities in Erasmus+, therefore also examines the participants' assessments of this issue. For this, aspects of the (further) development of teaching and learning methods and the change of personal innovation potential are used.

Over the overall period, the indicator is 3.8. Altogether, the indicator of innovation in the transnational perspective show a high stability and point to a positive impact of the mobility programmes on the participant's view on the innovative development of his/her own and the sending institution. Participating teachers and trainers think that their participation will lead to the use of new teaching or training methods at their sending institution and they will be able to use good practices and approaches learned through their stay abroad. Learners state that they have learned better how to develop ideas and put them into practice.

Overall, participation in mobilities is considered to be conducive to innovation (both in terms of own skills and in the functioning of the sending institutions). However, the extent of the assessment of this positive effect depends on the individual institutions themselves (both the sending and the receiving) and their already achieved level of innovation. In Hungary, the impact of mobility participation on innovation potential is estimated to be highest (value 4 on the five-part scale), slightly lower (3.6 to 3.7) in the Scandinavian countries and in Austria. Also valid for this indicator: the longer the mobility, the stronger the positive effect.

European Citizenship and Internationalisation

Educational programmes in the EU always have the implicit goal of strengthening European thought, raising European awareness and thus contributing to a stronger identification with Europe. In the impact model, this topic is indirectly represented by questions on the interest in European topics, awareness of democratic values and the internationalisation of institutions.

Over the overall period, the indicator is 3.8 (on a 5-part scale). That points to a rather positive impact of the mobility programmes on the participant's view on the European issue. The highest values are achieved by questions that aim to the rising interest in European topics. In regard to European citizenship – as with the other issues as well – one has to have in mind, that participants assess the impact of the mobility programme on specific areas. So it's all about changing existing skills, facilities and attitudes. For this reason, it is important to remember that the attitude of the participants prior to mobility is the starting point for the assessment. People with an initially very positive attitude towards Europe may rate the effects of mobility less than Eurosceptics. When comparing country results, it should also be borne in mind that different levels of general agreement with the European Union or the European idea exist in different countries (irrespective of whether there are any political questions on conflicts between the EU and European member countries. The country-specific results are to be assessed from these points of view: The highest effects on EU citizenship are reported by participants from Hungary and Estonia, with lower ratings in the member states Netherlands and Austria as well as in the non-member countries Norway and Iceland.

Professional development

Mobility for teachers and trainers aims to increase professional skills and thus contribute to improving education systems. The questions underlying the model therefore also relate to the participants' assessment of the development of their analytical, practical, emotional, social and personal skills, as well as to leadership and management skills, work-related knowledge and skills, linguistic and intercultural skills and their professional network.

The average of the indicator over the years of observation is stable at 4; the participants rate the positive effect of the mobility on their further occupational activity rather high. They claim to have improved their cultural awareness and expression, their interpersonal and social skills as well as their language skills and professional knowledge, and to have broadened their professional network. This applies to all target groups (men and women, younger and older participants). Teachers and trainers who attend longer mobilities estimate the effect even higher than those participants who complete shorter mobilities.

The overall picture of this indicator group shows the following picture: Similar to the topic of competence among learners, the impact of mobility on the personal competencies of the participating staff is assessed as positive. The exchange leads to an improvement of social skills and the perception of diversity. Less clearly (but still above average), the participants see an increase in subject-specific competences. This may also have something to do with a lack of immediate transferability of knowledge and skills acquired through the mobility. In the field of organisational or management-related competences, on the other hand, the participants recognise a more positive effect on average.

In all participating countries participants think that mobilities have a quite positive effect on their professional development. The highest effect can be observed in Hungary, Estonia and Slovenia (4.3 resp. 4.2), while participants from Norway and the Netherlands estimate the effects of mobility on professional development to be slightly lower.

System improvement

In order to sustainably raise the level of education, the European Union and the member states are making some efforts to further develop and optimise educational systems. One element in this context is an increased cooperation between different educational institutions and between the educational system and the labour market. In the model these aspects are examined in the participant’s survey of teachers and trainers.

Over the overall period, the indicator is 3.7, which is slightly below the average of the other indicators. Nevertheless, the participants reflect a rather strong impact in regard to the reinforcement of cooperation between partner institutions and think that this will go on in the future. In regard to cooperation with players in the labour market their estimation is more reluctant. The impact on system improvement (like with innovation) is strongly connected to the sending institutions and depends on the position of the participants within the institution. That is why in assessing the impact of mobility on system improvement older participants give more positive assessments. This is because these people tend to be in positions in the sending institutions in which they can more easily trigger systemic changes.

A country-specific analysis shows that in this indicator the model results are more widely distributed than in all other subject areas, they range from 3.5 to. The biggest effects of mobilities on system improvement are reported by participants from Finland and Sweden.

In a longitudinal analysis, Austria, whose education system has gone through a phase of major reforms in recent years, shows the largest increase in the average value. This indicates that the institutional setting of educational systems which differs quite a lot throughout Europe influences the results as well as the individual position of the participants within their institution.

III. Conclusion

The detailed analysis of the model results (both at transnational level and in the comparison of the participating countries) shows:

- That due to the total number of datasets, the stability of results both in terms of time and geography, and the low variance the model is well suited to reflect the participants' (self) assessment of the effects of VET mobility in Erasmus+;
- that the impact of mobilities on the participant's development and (in terms of participating staff) the development of the sending institutions is appreciated by the participants;
- that the effect from the point of view of the participants is particularly high in the area of their own competences, and above all in the field of personal and social skills;
- Although the assessment of the effects of mobilities in the topics of innovation, European citizenship and system improvement is less than in the areas of competence, employability and professional development, the impact is seen positive by the participants. Among other things, this is due to the greater importance of possible national differences in attitudes (e.g. towards Europe), as well as differences in the level of innovation of the institutions involved and in the different systems to which the sending and receiving institutions belong.

The results can be used in several ways:

- to show the importance of mobility programmes for a sustainable and positive development of the education and labour market situation in Europe;
- to provide guidance on how to optimize Erasmus+ mobility programmes for accuracy and target group adequacy;
- to improve the questionnaires of the participant surveys with regard to a better reproducibility of European goals and strategies by means of in-depth analyses.

IV. Annex

Definition of relevant categories and underlying information

Topics

The six main topics for which sub-indicators where developed are the following[3]:

- Competence
- Employability
- Innovation
- European Citizenship and Internationalisation
- Professional development
- System improvement.

Response categories

The MIA-Q sub-model is based on the participant surveys for learners and staff in Mobility Tool+, and uses a large part of the questions cited in the questionnaire. Most questions have five fixed answer categories. The scales are:

- "Strongly agree, rather agree, Neither agree nor disagree, Rather disagree, Strongly good disagree",
- "Very good, Good, Fair, Poor, Very poor",
- "Very Satisfied, Rather satisfied, Neither satisfied nor dissatisfied, Rather dissatisfied, Very dissatisfied".

Observation periods

The sub-model was tested during the late autumn 2018 using a centralized data extraction for all participating NAs for the mobilities of 2014 to 2016.

Socio-economic categories

By linking anonymised survey data and administrative data on mobilities (via the Mobility ID), it is possible to calculate model results for a range of socio-economic and action-related criteria. Socioeconomic characteristics include gender, age and nationality of participants (relative to the sending country). The following mobility-related variables could be used for a differentiated analysis: region of the receiving institution, duration of mobility or, for example, the main language of the respective mobilities. For this report the variables gender, age and duration where analysed.

Please note that the cut-off-point between young and old is different for learners and staff

	Learners	Staff
Young	< 19	< 35
Old	>= 19	>= 35

[3] For a detailed description of the topics and the underlying questions for the indicators see: Löffler, Roland et al. (2018). Scientific Monitoring „Applied Methods of Impact Assessment Final report TCA Showing and Identifying Impact of Erasmus+ on EU and National Level, Part I. Wien: öibf, 9ff.

The same is true for the cut-off-points for the background variable duration:

	Learners	Staff
Short	< 2 weeks	< 6 days
Medium	2 - 4 weeks	6 – 10 days
Long	> 4 weeks	> 10 days

a. Model concept and operationalisation

Figure 1*: The structure of the VET impact model*

The impact model consists of six *dimensions*, each measured by a set of questions from the learners and/or staff datasets. For each dimension a *dimension score* is calculated. In addition, a composite *programme score* is calculated from the six dimension scores.

Calculation of the scores

All survey questions used in the model have an identical 5-point response scale with values from 1 (strongly disagree) to 5 (strongly agree):

Figure 2: The 5-point response scale

		Scores
Strongly disagree		1
Rather disagree		2
Neither agree, nor disagree		3
Rather agree	X	4
Strongly agree		5

All scores are based on the calculation of *unweighted means* across these scales. All scores will consequently have a value between 1 and 5 with 3 as a balancing point between positive and negative responses. The higher the score, the more positive are the respondents.

For all dimension scores based on data from only one of the two datasets (learners or staff), the scores are calculated in the following way:

- **Step 1**: For each respondent, the mean score across all relevant questions is calculated
- **Step 2**: The dimension score is calculated as the mean of all the respondents mean scores from step 1

For dimensions composed of data from both datasets (Innovation and European Citizenship), the mean score for each population (learners or staff) is calculated first following the two steps above. Then the dimension score is calculated as the unweighted mean of these two means. As a consequence, learners and staff have the same weight in the calculation of these dimension scores.

- **Step 3**: The programme score is calculated as the unweighted mean of all the dimensions scores from the steps above.

This means that all six dimensions carry the same weight in the calculation of the programme score.

- **Step 4**: All scores are firstly calculated per country and year as described above. The corresponding transnational scores are calculated as the unweighted mean of the national scores.

This means that all countries carry the same weight in the calculation of the transnational scores.

Selected graphs

Program score indicator by duration
2014-2016
2014
Short duration
Medium duration
Long duration
3.9
4
4
2015
Short duration
Medium duration
Long duration
3.8
3.9
4
2016
Short duration
Medium duration
Long duration
3.8
4
4.1
1
2
3
4
5

Competence by country and year
2014
2015
2016
Norway
Sweden
Netherlands
Austria
Finland
Iceland
Slovenia
Estonia
Hungary
4
4.1
4.2
4.2
4.2
4.1
4.3
4.4
4.5
4
4
4.1
4.2
4.2
4.3
4.2
4.3
4.4
4.1
4.2
4.1
4.2
4.2
4.2
4.3
4.3
4.4
1
2
3
4
5

Employability by country and year
2014
2015
2016
Netherlands
Norway
Finland
Iceland
Austria
Sweden
Slovenia
Estonia
Hungary
4.1
4.1
4.1
4.1
4.1
4.2
4.3
4.3
4.5
4
4
4.1
4.1
4.1
4.1
4.2
4.2
4.4
4
4
4
4.1
4
4.1
4.2
4.2
4.4
1
2
3
4
5

Innovation by country and year
2014
2015
2016
Sweden
Norway
Finland
Austria
Netherlands
Iceland
Estonia
Slovenia
Hungary
3.6
3.7
3.7
3.6
3.8
3.8
4
4
4.1
3.5
3.6
3.6
3.7
3.8
4.1
3.9
4
4
3.6
3.6
3.7
3.7
3.8
3.9
4
3.9
4
1
2
3
4
5

European citizenship by country and year
2014
2015
2016
Netherlands
Norway
Austria
Iceland
Sweden
Finland
Slovenia
Estonia
Hungary
3.6
3.6
3.6
3.6
3.8
3.8
3.9
4
4.1
3.6
3.7
3.7
3.7
3.6
3.8
3.9
3.9
4
3.6
3.7
3.7
3.8
3.8
3.9
3.9
3.9
4
1
2
3
4
5

Professional development by country and year
2014
2015
2016
Netherlands
Norway
Sweden
Finland
Austria
Iceland
Slovenia
Estonia
Hungary
3.8
3.9
4
4
3.9
4
4.2
4.2
4.3
3.8
3.8
3.9
4.1
4.2
4.2
4.2
4.2
4.3
3.8
3.9
4.1
4.1
4.1
4.1
4.2
4.3
4.3
1
2
3
4
5

Average N of cases per year - learners

Average N of cases per year - staff
Netherlands
1159
Finland
580
Hungary
558
Sweden
318
Norway
241
Austria
168
Slovenia
168
Estonia
162
Iceland
59