Report of the Data Analysis of the Teacher Questionnaire Used to Measure School Factors: Across and Within Country Results

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1. Across country results

The first two sections of the report present the results from the across-countries and the within country analyses, correspondingly.

1.1 Steps of data processing for the analysis of the teacher questionnaire data

In this part of the data documentation steps of data cleaning and preparation are described. Specifically four steps were undertaken for this task: (1) removing schools with low teacher response rates (see section 1.1.1) (2) cleaning the remaining data, (3) recoding the data, (4) conducting Reliability analysis for the whole scale. These data cleaning and analysis procedures are described in detail below.

1.1.1   Removing schools with low teacher response rates

As it was agreed with all the project partners, schools with a teacher response rate below 30% (or schools with less than 3 teacher questionnaires) had to be removed from the analysis. For that reason, the data collected from the teacher questionnaires in Greece were not used for any analyses concerning the school factors. Specifically, the schools that participated in this study, in Greece, were very small and for all the Greek schools we had less than 3 questionnaires. From the other five countries, 22 schools in total were removed from the analyses due to low teacher response rates. More specifically, 5 schools were removed from Belgium, 2 schools were removed from Cyprus, 4 schools were removed from Germany and 11 schools were removed from Ireland. In Slovenia no schools had to be removed as for all the schools the response rate was greater than 30%.

1.1.2 Cleaning the data

As part of the first steps of data cleaning, descriptive statistics by item were conducted in order to check carefully whether any mistakes were made regarding the coding of the questionnaire data. According to the coding guidelines that were given to all the countries the coding for all items was from 1 to 4 (1= "Strongly Disagree" – 5= "Strongly Agree"). Missing values were indicated by using the codes 7, 8, and 9. The code 9 was given when a teacher omitted the task. The code 8 was used when a teacher's response was ambiguous. The code 7 was used to indicate that items were

not administered. Where a mismatch of data coding was found the corresponding country was notified and the data were being corrected. The number of missing values per item is presented in Appendix A, Table A1. The percentages of the items that were coded with 7, 8 and 9 were very low therefore they were considered as missing and no additional processes were made. More specifically, as can be seen in Table A1 (see Appendix A), for code 7 there were only 358 missing values for each item and all of them were located in Germany (see table A4) since item 6C was not administered in Germany. For code 8 the number of missing values was very small (the largest number of missing values with code 8 was 90 for item 7) and for code 9 the percentage of missing values was not more than 9%.

1.1.3 Recoding the data

As mentioned, all the items were coded by all the participating countries from 1 to 4. However, item 35 had a negative meaning and was therefore recoded in order to match the answers of the rest of the scale.

1.1.4 Conducting Reliability Analysis

After recoding the negatively worded items reliability analysis was conducted and the Cronbach alpha was calculated for the entire scale (81 items in total). The results of the reliability analysis showed that the Cronbach alpha was very high (a= 0.97). In addition, the calculation of the value of the Alpha "if item deleted" revealed that none of the items had to be removed.

1.2 Generalisability Analysis

After the cleaning and preparation of the data, a Generalisability Study on the use of teachers' ratings was conducted (Shavelson, Webb & Rowley, 1989; Cronbach, Gleser, Nanda, & Rajaratnam, 1972). The results of the ANOVA analysis (see Appendix A, Table A7) showed that the data can be generalized at the school level, as for all the items of the questionnaire, the between group variance was higher than the within group variance ($p<0.05$).

1.3 Categorization of items according to factors

The questionnaire was translated and adapted from an earlier version that was used in previous studies in Cyprus and in which all the factors and dimensions were measured (for the questionnaire see Appendix B). The validity of the original questionnaire with the five dimensions was tested and the results were satisfactory (Creemers & Kyriakides, 2010). However, in spite of the fact that in the original questionnaire that was used in earlier studies in Cyprus all the dimensions were measured, for this project some of the questionnaire items had to be removed for adaptation reasons as they did not match the context of some participating countries. Therefore, it was not possible to conduct factor analyses to measure the importance of each dimension. In addition, the items included in the questionnaire concerned a large number of factors and therefore our intention was not to test the five effectiveness dimensions but each of the school factors (for the specification table with the categorization of items in all the school factors, see Appendix C).

1.4 Confirmatory Factor Analysis (CFA)

Having in mind the categorization of the items in the Specification Table (see table 2), Confirmatory Factor Analysis was conducted for each of the school factors of the dynamic model which were measured by the teacher questionnaire by using the EQS software for Structural Equation Modeling (Bryne, 1994). CFA was used, as the objective was to test whether the data fit a hypothesized measurement model; in this case the assumptions of the dynamic model in regard to each of the school factors. The CFA models which were conducted for the school factors, showed that some of the items that were included in the questionnaire had to be removed from the analyses. Therefore, the items that remained in each of the school factors in the CFA models are presented in Table 1.1. For the items that were excluded from the analyses some possible explanations are provided in section 1.5.

For factors concerned with teacher collaboration and relation with community, the CFA results are not presented in Table 3 as only 3 items remained measuring each factor and the one-factor model is just identified (i.e., its degrees of freedom are 0). Therefore, for teacher collaboration and relation with community exploratory factor analysis was conducted with satisfactory results. Specifically, for teacher

collaboration the first eigenvalue was equal to 1.57 and explained more than 50% of the variance whereas the second eigenvalue was much smaller than 1 (i.e., 0.77). These results show that we can treat these three items as belonging to one factor especially since all three items had relatively big loadings (i.e., bigger than 0.69). For relation with community the first eigenvalue was equal to 1.83 and explained more than 60% of the variance whereas the second eigenvalue was again much smaller than 1 (i.e., 0.65). In addition, all three items had relatively big loadings (i.e., bigger than 0.73) which shows that we can treat these three items as belonging to one factor.

In the case of Quality of teaching, items 8I, 8J, 8K, 8L, 8M, 8N,8O were grouped as one variable as they all concerned aspects of quality of teaching through staff meetings and they had a high correlation (greater than 0.4). Likewise, in the case of evaluation of school policy on teaching items 32A, 32B and 32C were grouped as one variable and items 5A, 5B and 5C were grouped as another variable. For evaluation of school learning environment items 5F and 5G were also grouped as one variable.

The reliability of each scale measuring the school factors was also calculated and the results show that for each factor the Cronbach alpha was satisfactory (for all factors alpha was greater than 0.7). In addition, the calculation of the value of the "Alpha if item deleted" revealed that none of the items had to be removed from each factor. The results of the reliability analysis per factor, across countries are also presented in Table 1.1. In addition, the covariance matrixes used for the SEM analysis were produced and SEM analysis per factor was initially conducted to find out whether the questionnaire items could help us develop scores for each factor. For the SEM analysis the EQS program was used. The fit indices of the one factor models that were produced are presented in Table 1.1. For the school factors a two-factor model could not be produced as the dimensions were not measured in the questionnaire but the single factor models that were produced were found to fit well to the data.

Table 1.1: Items of the CFA models and across countries results of the SEM and Reliability Analysis

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: **(X²= 12, df= 1 CFI=0.995, RMSEA= 0.063) a = 0.70**
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26, 27	One – Factor Model: **(X²= 78, df=8 CFI=0.987, RMSEA= 0.055) a = 0.78**
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: **(X²= 16, df= 2 CFI=0.993, RMSEA= 0.051) a = 0.71**
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: **(X²= 47, df= 5 CFI=0.994, RMSEA= 0.054) a = 0.84**
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: **(X²= 41, df= 11 CFI=0.995, RMSEA= 0.031) a = 0.82**

Note: In the case of quality and quantity of teaching we had only 2 indicators and therefore they are not presented in Table 1.1.

1.5   Results of the across countries SEM analyses

SEM analysis was conducted to see whether the items of the questionnaire can be grouped according to our assumptions. Separate SEM analyses were conducted for the three overarching factors: a) School policy on teaching, b) Policy on the School Learning Environment and c) Policy on Evaluation. Our attempt was to develop three models for these overarching factors based on the data from all the countries and then to replicate these models in the within country analysis. From the separate SEM analysis, three models were developed and three second order factors were identified. The first overarching factor is School policy on teaching and consists of the factors measuring quantity of teaching, quality of teaching and provision of learning opportunities. The other overarching factor is Policy on the School Learning Environment and consists of the factors measuring teacher collaboration, partnership policy, provision of sufficient learning resources and relation with the community. Finally, the third overarching factor is Policy on Evaluation and consists of the factors measuring evaluation of the school policy on teaching and evaluation of the learning environment. Separate within country SEM analyses showed that, the models fit well to the data emerged by each country separately. The fit indices of the across country models are shown in Table 1.2.

Also, another model was tested for each of the three overarching factors (school policy on teaching, policy on the school learning environment and school evaluation) in order to compare its fit to the data with the 3 proposed models. In these models (Models 2) all the items that were used for the SEM analysis in each of the three overarching factors were considered as belonging to a single factor. These models were an attempt to see if the questionnaire items refer to a social desirability factor and thereby the questionnaire is not valid at all. The fit indices of each model are shown in table 2. We can see that model 1 is the model that was found to best fit the data for each of the overarching factors. If models 2 were found to fit to the data, this would cause doubts on whether we could have scores per each factor separately. The fit indices of each model are shown in Table 1.2. We can see that model 1 was found to best fit the data and that the fit indices of model 1 were very good.

Table 1.2: Results of the SEM analysis across countries

SEM analyses – Results							
A. School Policy on teaching							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	143	16	8,9	0.001	0.984	0.052	0.045 – 0.060
Model 2 (one factor model)	484	20	24,2	0.001	0.943	0.090	0.083 – 0.097
B. Policy on the school learning environment							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	669	96	6,9	0.001	0.963	0.045	0.042 – 0.049
Model 2 (one factor model)	3879	135	28,7	0.001	0.759	0.098	0.095 – 0.101
C. School Evaluation							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	585	57	10,2	0.001	0.967	0.057	0.053 – 0.061
Model 2 (one factor model)	1600	65	24,6	0.001	0.905	0.090	0.087 – 0.094

Figures 1, 2 and 3 reveal the second order factor models that were found to fit to the data when across country analysis was conducted. These models show that the items of the teacher questionnaire can be used to measure the school factors. Figure 1 presents the second-order factor model of the teacher questionnaire measuring school factors on the school policy on teaching with factor parameter estimates. Figure 2

presents the second-order factor model of the policy on the school learning environment and Figure 3 shows the second-order factor model for school evaluation.

Based on the results of models 1 the factor scores were estimated based on the loadings of the items that occurred from the SEM analysis, as they appear below in Figures 1, 2 and 3. These factor scores will be used for the multilevel analysis in order to identify the impact of the school factors on student achievement in mathematics and science. Looking at the loadings of the items and the factors we can see that they are all very high and that all the loadings are statistically significant. The only exception is for V1 in the overarching factor concerned with policy on teaching (Figure 1) and for V6, V7 and V13 in the overarching factor concerned with evaluation (Figure 3). However, the loadings of all the other items are very high (higher than 0.8 for policy on teaching and higher than 0.6 for evaluation).

Figure 1: The second-order factor model of the teacher questionnaire measuring school factors on the school policy on teaching with factor parameter estimates
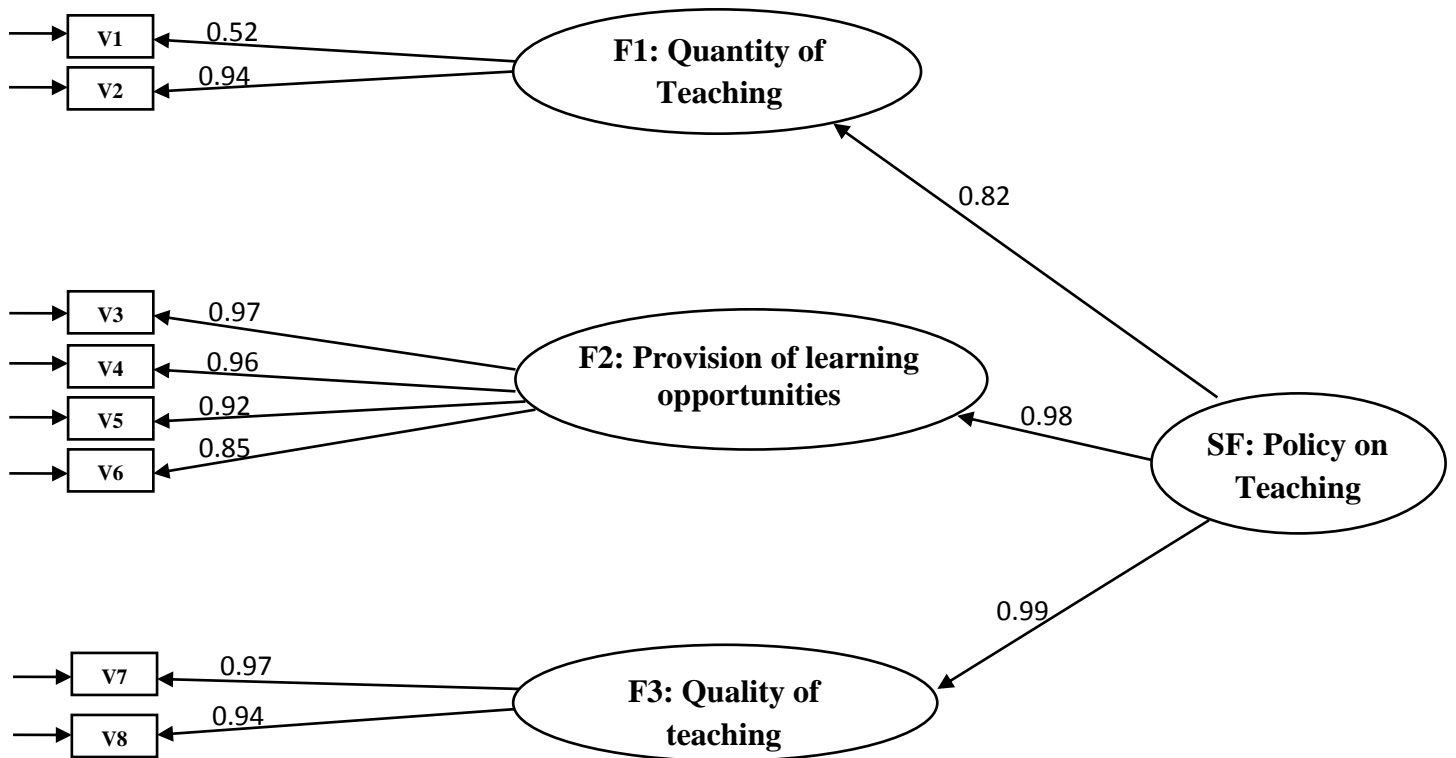
First Order Factors:

F1: Quantity of teaching

F2: Provision of learning opportunities

F3: Quality of teaching

Second Order Factor:

SF: School Policy on teaching

Figure 2: The second-order factor model of the teacher questionnaire measuring school factors on the school learning environment with factor parameter estimates

First Order Factors:

F1: Collaboration and interaction between teachers

F2: Partnership policy

F3: Provision and use of sufficient learning resources

F4: Relation with the Community

V11: Student behaviour outside the classroom

Second Order Factor:

SF: Policy on the school learning environment

Figure 3: The second-order factor model of the teacher questionnaire measuring school factors on school evaluation with factor parameter estimates
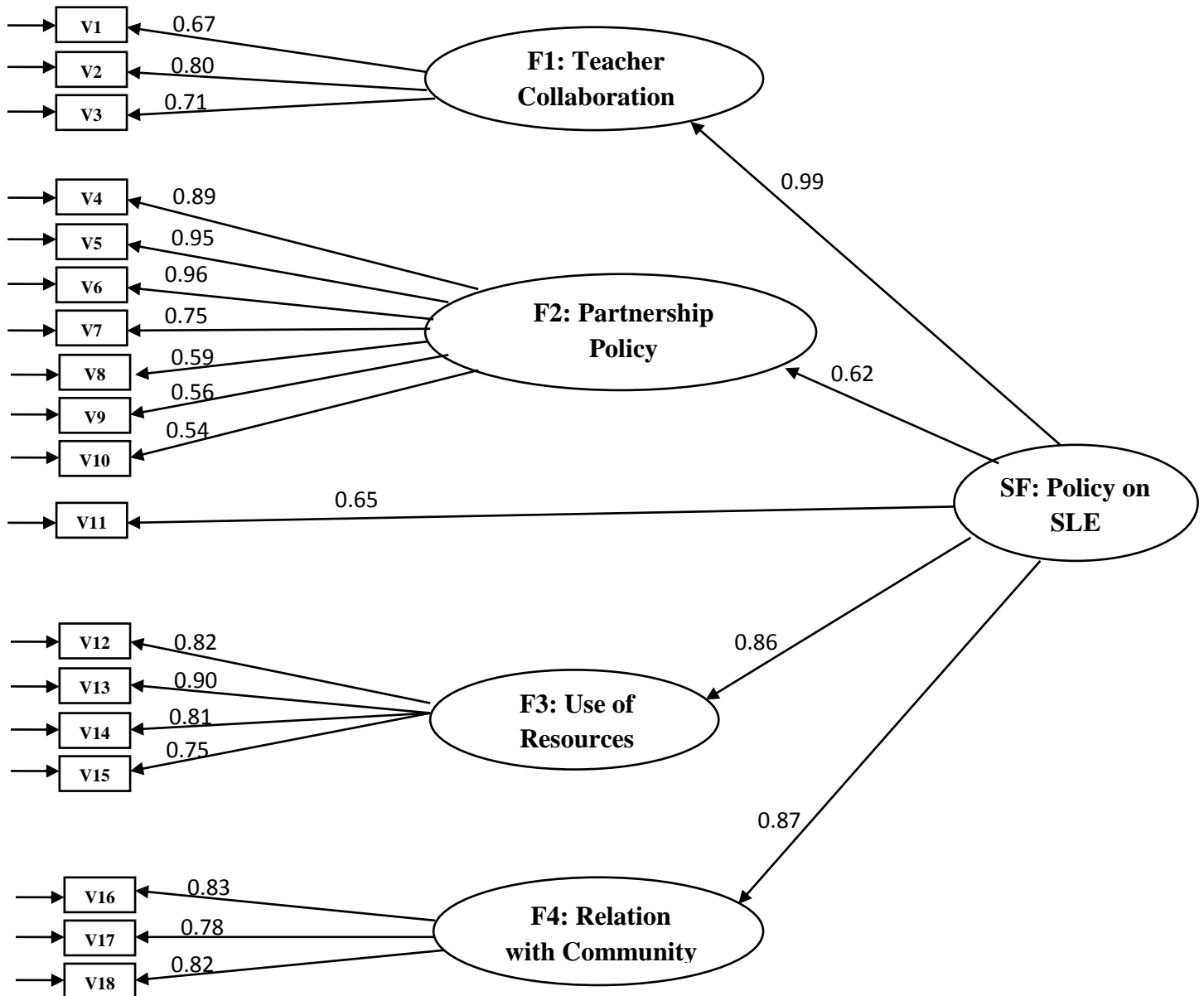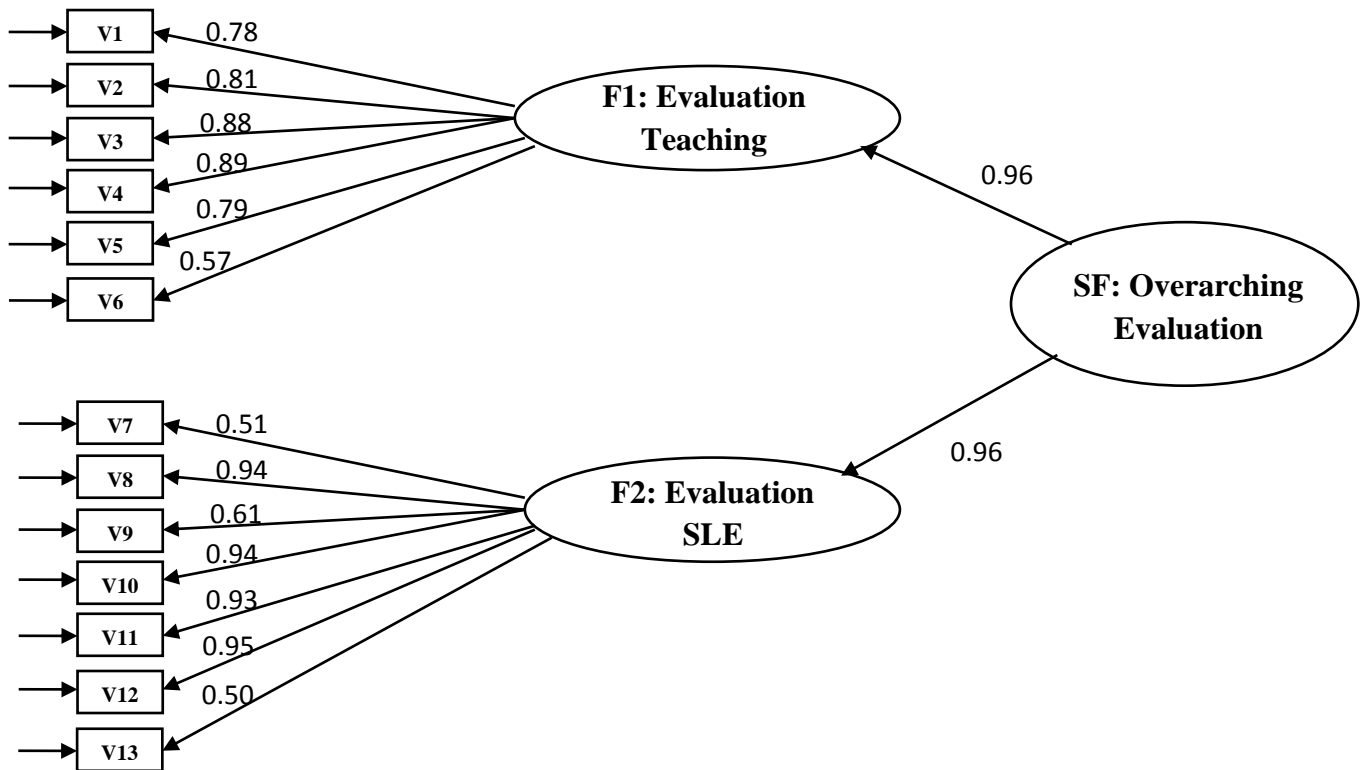

First Order Factors:

F1: Evaluation of the school policy on teaching

F2: Evaluation of the school learning environment

Second Order Factor:

SF: School Evaluation

Interpretation of Results

First, it is important to note that there was a difficulty in covering the five dimensions of the dynamic model, due to the fact that some of the items that were included in the original questionnaire had to be removed in order for the questionnaire to be suitable for the context of all the participating countries and due to the fact that a lot of factors were measured through the questionnaire. Therefore, we had to collapse the five dimensions and focus on the measurement of each school factor.

We have managed to create three separate models for the three overarching factors which show the relations of the factors in all the countries, but in order for the three models to best fit the data both within and across the countries, they had to be simpler and some items had to be removed.

From the CFA analyses (section 1.4), 30 items in total had to be removed out of the 81 items that were included in the questionnaire. These items belong to four categories which are: a) items concerned with staff meetings, b) items measuring the differentiation dimension, c) negative items and d) items concerned with school participation in programmes.

Some explanations of the possible reasons that some items had to be removed from the analyses are presented in more detail below and the removed items are classified based on our assumptions about the reasons for which they might have had to be removed.

As mentioned, the results from the analyses showed that some of the items concerned with staff meetings had to be removed. A possible explanation could be that the test was developed in Cyprus were schools have staff meetings every week and that may not be the case in some countries, were staff meetings may not take place that often and therefore decisions about the school policy may not be taken at the staff meetings. These items were: 4a-4d, 8a, 15a, 15c, 15d, 15f and 28. Moreover, as it resulted from the CFA analyses all the items measuring the differentiation dimension had to be removed. This can probably be explained by the fact that differentiation dimension is not used in all the countries the same way and also by the fact that it is difficult to be located. The items measuring the differentiation dimension were: 7, 9, 12, 13, 19, 24

and 39. In addition the one negatively worded item that was included in the questionnaire (item 35) had to be removed for which the translation may have caused some problems. A similar problem with the negative items and the items measuring the differentiation dimension were also found in the student questionnaire measuring the teacher factors. Additionally, items concerned with school participation in projects (i.e. Comenius etc) had to be removed. This may be due to differences to the system in some countries as perhaps in some countries it is more common for schools to participate in projects than others. For instance schools in more centralized systems are not expected to have a large participation in projects whilst in more decentralized systems schools are expected to have a greater participation. These items were: 6a, 6b and 6c.

Finally, item 8d was removed as it was measuring two aspects of the schools' policy on the provision of learning opportunities.

At the next step we had to develop models to fit the data for each of the three overarching factors (school policy on teaching, policy on the school learning environment and school evaluation) (see section 1.5) and our aim was to create models that were comparable from country to country. In this attempt, 8 items had to be removed and they are presented below:

For the factor concerned with the provision of learning opportunities: items 5d, 5e and 22c were removed from the SEM analysis and not from the factor analysis as they were found to behave differently in some countries.

For the factor concerned with the partnership policy: items 11a and 25 were also removed from the SEM analysis as there loadings were found to be low and therefore their contribution to the factor was small.

For the factor concerned with teacher collaboration: item 16 was removed from the SEM analysis as its loading was found to be low.

For the factor concerned with quantity of teaching: item 22a was removed from the SEM analysis as its loading was found to be low.

And finally, for the factor concerned with student behavior outside the classroom: item 20 was removed from the SEM analysis as its loading was also found to be low.

The fact that the SEM analyses showed that the factors fit well to the data provides evidence supporting the construct validity of the questionnaire and the second order factors can be used for the multilevel analyses.

2. Within country results

A similar procedure as the across country analyses was used in order to conduct within country analyses where the data of each country were processed separately.

2.1 Generalisability Analysis

A Generalisability Study on the use of teachers' ratings was conducted again with the data of each country separately. The results of the ANOVA analysis for each country showed that some items that were included in the questionnaire were not generalizable in some countries which can be explained by the small number of the sample. More specifically, 3 items in Belgium were found not to be generalizable, 21 items in Cyprus, 11 items in Germany and 10 items in Ireland. In Slovenia all the items were found to be generalizable. However, the standard deviation of these items in all the countries was very small (smaller than 1) and therefore they were not excluded from the analyses.

2.2 Confirmatory Factor Analysis (CFA)

Then, Confirmatory Factor Analysis was conducted again for each of the school factors of the dynamic model which were measured by the teacher questionnaire and their reliability was measured for each country. For factors concerned with teacher collaboration and relation with community, the CFA results are again not presented in Tables 2.1 – 2.5 as only 3 items remained measuring each factor and the one-factor model is just identified (i.e., its degrees of freedom are 0). Therefore, for teacher collaboration and relation with community exploratory factor analysis was conducted for each country separately with satisfactory results, which again showed that we can treat the items as two factors, as their loadings were very big (bigger than 0.60).

Again, in the case of Quality of teaching, items 8I, 8J, 8K, 8L, 8M, 8N,8O were grouped as one variable, in the case of evaluation of school policy on teaching items 32A, 32B and 32C were grouped as one variable and items 5A, 5B and 5C were grouped as another variable. For evaluation of school learning environment items 5F and 5G were also grouped as one variable.

The CFA analysis by country which was conducted produced similar results as the across country analysis; it showed that the same items included in the across country analysis should be included in the by country analysis for each of the school factors measured by the teacher questionnaire. However, in Ireland some changes were made in regard to the school policy on teaching and the factor concerned with the relation with the community. These changes will be further discussed in section 2.3

The reliability of these factors was also calculated for the data of each country separately and the Cronbach alpha of each factor was observed. The results of the reliability analysis showed that the Cronbach alpha was satisfactory for all factors (given the small number of items of each subscale, see Cronbach, 1990). The results of the reliability analysis per factor, within countries are presented in Tables 2.1 – 2.5. In addition, SEM analysis per factor was again conducted for each country and the fit indices of the one factor models that were produced from the within country analysis are also presented in Tables 2.1 – 2.5.

Table 2.1: Items of the CFA models and results of the SEM and Reliability Analysis for Belgium

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: **(X^2= 0.3, df= 1 CFI=0.999, RMSEA= 0.001) a = 0.58**
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26, 27	One – Factor Model: **(X^2= 28, df=10 CFI=0.978, RMSEA= 0.059) a = 0.74**
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: **(X^2= 3, df= 2 CFI=0.995, RMSEA= 0.037) a = 0.61**
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: **(X^2= 23, df= 9 CFI=0.979, RMSEA= 0.055) a = 0.75**
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: **(X^2= 41, df= 13 CFI=0.958, RMSEA= 0.064) a = 0.74**

Table 2.2: Items of the CFA models and results of the SEM and Reliability Analysis for Cyprus

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: $(X^2= 1, df= 1$ **CFI=0.997, RMSEA= 0.054**) **a = 0.73**
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26, 27	One – Factor Model: $(X^2= 33, df=12$ **CFI=0.948, RMSEA= 0.078**) **a = 0.77**
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: $(X^2= 5, df= 2$ **CFI=0.985, RMSEA= 0.076**) **a = 0.71**
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: $(X^2= 15, df= 9$ **CFI=0.991, RMSEA= 0.049**) **a = 0.86**
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: $(X^2= 21, df= 12$ **CFI=0.989, RMSEA= 0.051**) **a = 0.85**

Table 2.3: Items of the CFA models and results of the SEM and Reliability Analysis for Germany

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: (X^2= 0.6, df= 1 CFI=0.999, RMSEA= 0.001) a = 0.67
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26	One – Factor Model: (X^2= 15, df=5 CFI=0.983, RMSEA= 0.076) a = 0.75
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: (X^2= 3, df= 2 CFI=0.994, RMSEA= 0.041) a = 0.66
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: (X^2= 13, df= 7 CFI=0.992, RMSEA= 0.050) a = 0.80
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: (X^2= 21, df= 12 CFI=0.986, RMSEA= 0.047) a = 0.81

Table 2.4: Items of the CFA models and results of the SEM and Reliability Analysis for Ireland

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: **(X^2= 1, df= 1 CFI=0.999, RMSEA= 0.016) a = 0.76**
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26, 27	One – Factor Model: **(X^2= 23, df=10 CFI=0.982, RMSEA= 0.065) a = 0.77**
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: **(X^2= 2, df= 2 CFI=0.999, RMSEA= 0.023) a = 0.74**
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: **(X^2= 14, df= 6 CFI=0.987, RMSEA= 0.066) a = 0.82**
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: **(X^2= 35, df= 14 CFI=0.972, RMSEA= 0.069) a = 0.85**

Table 2.5: Items of the CFA models and results of the SEM and Reliability Analysis for Slovenia

School Factors		Results: SEM and Reliability Analysis
A. School Policy on teaching		
Provision of Learning opportunities	8F, 8G, 15B, 22B	One – Factor Model: (X^2= 0.2, df= 1 CFI=0.999, RMSEA= 0.001) a = 0.68
B. Policy on the School Learning Environment		
Partnership Policy	21A, 21B, 21C, 21D, 23, 26, 27	One – Factor Model: (X^2= 59, df=10 CFI=0.979, RMSEA= 0.060) a = 0.78
Provision of sufficient learning resources	8E, 11C, 15E, 22D	One – Factor Model: (X^2= 4, df= 2 CFI=0.998, RMSEA= 0.027) a = 0.71
C. Policy on Evaluation		
Evaluation of the school policy on teaching	5ABC, 31, 32ABC, 33, 34, 37	One – Factor Model: (X^2= 28, df= 7 CFI=0.993, RMSEA= 0.047) a = 0.84
Evaluation of the learning environment	5FG,36, 38, 40, 41, 42, 43	One – Factor Model: (X^2= 61, df= 12 CFI=0.983, RMSEA= 0.054) a = 0.82

2.3 Within Countries SEM analysis

For the within country analyses separate SEM analyses were again conducted for the three overarching factors: a) School policy on teaching, b) Policy on the School Learning Environment and c) Policy on Evaluation. Our attempt was to develop three models for these overarching factors based on the data each country separately based on the across countries models. From the within country SEM analysis, it was found out that the models that were produced by the across country analysis fit well to the data emerged by each country separately. More specifically, three models were developed for each country and three second order factors were identified. The three overarching factors for each country consist of the same factors that were developed in the across countries analyses. However, in Ireland the factor of quantity of teaching was not included in the model of policy on teaching as it was found not to fit the data of the country.

In the within country analyses the other model which was tested in the across countries analyses (model 2) was again tested to compare its fit to the data with the proposed model for each of the three overarching factors (school policy on teaching, policy on the school learning environment and school evaluation). In these models (Models 2) all the items that were used for the SEM analysis in each of the three overarching factors were considered as belonging to a single factor. The fit indices of each model are shown in Tables 2.6 – 2.10. We can see that model 1 is again the model that was found to best fit the data in each country for each of the overarching factors. We can see that model 1 was found to best fit the data of each country and that the fit indices of model 1 were very good.

The results of the SEM analysis per country are presented in more detail below:

1) **Belgium:**

Table 2.6: Results of the SEM analysis in Belgium

SEM analyses – Results							
A. School Policy on teaching							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	21	15	1,4	0.001	0.994	0.029	0.001 – 0.054
Model 2 (one factor model)	82	20	4,1	0.001	0.941	0.077	0.060 – 0.095
B. Policy on the school learning environment							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	140	83	1,6	0.001	0.974	0.036	0.025 – 0.046
Model 2 (one factor model)	1448	135	10,7	0.001	0.546	0.120	0.113 – 0.126
C. School Evaluation							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	90	53	1,7	0.001	0.979	0.037	0.023 – 0.049
Model 2 (one factor model)	347	65	5,3	0.001	0.846	0.091	0.082 – 0.101

As can be seen in Table 2.6, models 1 are the models that best fit the data in Belgium for the three overarching factors, and their fit indices are satisfactory (i.e. they reveal that the data meet the requirements of the model). These models (models 1) are the

same as the 3 models which were presented in Figures 1, 2 and 3 that were produced from the across country analysis. In addition, the loadings of the items and the factors are also high and all the loadings are statistically significant. The structure of the three models for Belgium is the same as the three across countries models and no further items had to be removed. The loadings are presented in Figures 1.1, 1.2 and 1.3 in Appendix D.

Based on the loadings of the items that occurred from the SEM analysis, as they appear in Figures 1.1, 1.2 and 1.3 (Appendix D) the factor scores which will be used for the multilevel analysis were produced.

2) Cyprus:

Table 2.7: Results of the SEM analysis in Cyprus

SEM analyses – Results							
A. School Policy on teaching							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	27	16	1,7	0.001	0.989	0.049	0.011 – 0.080
Model 2 (one factor model)	61	20	3,5	0.001	0.957	0.085	0.061 – 0.109
B. Policy on the school learning environment							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	83	88	0,94	0.001	0.999	0.001	0.001 – 0.028
Model 2 (one factor model)	431	135	3,2	0.001	0.81	0.087	0.078 – 0.096
C. School Evaluation							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	74	54	1,4	0.001	0.99	0.036	0.011 – 0.055
Model 2 (one factor model)	187	65	2,9	0.001	0.937	0.081	0.067 – 0.094

In Table 2.7, the fit indices that were produced from the SEM analysis in Cyprus are presented and as we can see, models 1 are the models that also best fit the data in Cyprus for the three overarching factors, and their fit indices are satisfactory (i.e. they reveal that the data meet the requirements of the model). These models (models 1) are

again the same as the 3 models which were presented in Figures 1, 2 and 3 that were produced from the across country analysis. In addition, the loadings of the items and the factors are high and all the loadings are statistically significant. The structure of the three models for Cyprus is the same as the three across countries models and no further items had to be removed. The loadings are presented in Figures 2.1, 2.2 and 2.3 in Appendix D.

Based on the loadings of the items that occurred from the SEM analysis, as they appear in Figures 2.1, 2.2 and 2.3 (Appendix D) the factor scores which will be used for the multilevel analysis were produced.

3) Germany

Table 2.8: Results of the SEM analysis in Germany

SEM analyses – Results							
A. School Policy on teaching							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	24	15	1,6	0.001	0.992	0.041	0.001 – 0.070
Model 2 (one factor model)	110	20	5,5	0.001	0.919	0.112	0.092 – 0.133
B. Policy on the school learning environment							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	105	74	1,4	0.001	0.981	0.035	0.018 – 0.049
Model 2 (one factor model)	695	119	5,8	0.001	0.659	0.117	0.108 – 0.125
C. School Evaluation							
Models	**X^2**	**Df**	**$X^2/$ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	115	55	2,1	0.001	0.969	0.056	0.041 – 0.070
Model 2 (one factor model)	285	65	4,4	0.001	0.886	0.097	0.086 – 0.109

As it is shown in Table 2.8, models 1 are the models that best fit the data in Germany for the three overarching factors, and their fit indices are satisfactory (i.e. they reveal that the data meet the requirements of the model). These models (models 1) are again

the same as the 3 models which were presented in Figures 1, 2 and 3 that were produced from the across country analysis. The loadings of the items and the factors are high and all the loadings are statistically significant. However, for the model concerned with the overarching factor of policy on the school learning environment, in order for the model to best fit the data of the country, item 27 from the factor of partnership policy was excluded from the analysis as its loading was low. The loadings are presented in Figures 3.1, 3.2 and 3.3 in Appendix D.

Based on the loadings of the items that occurred from the SEM analysis, as they appear in Figures 3.1, 3.2 and 3.3 (Appendix D) the factor scores which will be used for the multilevel analysis were produced.

4) Ireland

Table 2.9: Results of the SEM analysis in Ireland

SEM analyses – Results							
A. School Policy on teaching							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	8	5	1,6	0.001	0.995	0.044	0.001 – 0.096
Model 2 (one factor model)	18	9	2	0.001	0.985	0.057	0.018 – 0.094
B. Policy on the school learning environment							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	58	66	0,9	0.001	0.999	0.001	0.001 – 0.026
Model 2 (one factor model)	791	104	7,6	0.001	0.631	0.142	0.133 – 0.151
C. School Evaluation							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	84	49	1,7	0.001	0.98	0.047	0.030 – 0.064
Model 2 (one factor model)	322	65	4,9	0.001	0.859	0.110	0.098 – 0.122

In Table 2.9, the fit indices that were produced from the SEM analysis in Ireland are presented and as we can see, models 1 are the models that also best fit the data in Ireland for the three overarching factors, and their fit indices are satisfactory (i.e. they reveal that the data meet the requirements of the model). In order for the models to best fit the data of the country, some changes were made to the models which were

produced from the across country analysis for the overarching factors concerned with the policy on teaching and the policy on the school learning environment. More specifically, in relation to the policy on teaching the factor of quantity of teaching was removed as it was found to not fit the data of the country. Since we only had two first order factors concerned with the policy on teaching a second order factor could not be developed since in that case the model would have been just identified (degrees of freedom= 0). However, as you can also see in Figure 4.1 in Appendix D, the correlation coefficient between the two factors (Quality of teaching and Provision of learning opportunities) is very high (r = 0.85).

Furthermore, for the overarching factor concerned with the policy on the school learning environment, in order for the model to best fit the data of the country, items 17 and 29 from the factor of relation with the community were excluded from the analysis as their loadings were low. Therefore, question 30 is regressed to the overarching factor.

For the overarching factor concerned with the policy on evaluation the structure of the model for Ireland is the same as the across countries model for evaluation and no further items had to be removed. All the loadings are presented in Figures 4.1, 4.2 and 4.3 in Appendix D.

Based on the loadings of the items that occurred from the SEM analysis, as they appear in Figures 4.1, 4.2 and 4.3 (Appendix D) the factor scores which will be used for the multilevel analysis were produced.

5) Slovenia

Table 2.10: Results of the SEM analysis in Slovenia

SEM analyses – Results							
A. School Policy on teaching							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 1)	53	12	4,4	0.001	0.987	0.050	0.037 – 0.064
Model 2 (one factor model)	277	20	13,9	0.001	0.921	0.096	0.086 – 0.107
B. Policy on the school learning environment							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 2)	388	115	3,4	0.001	0.963	0.041	0.037 – 0.046
Model 2 (one factor model)	1790	135	13,3	0.001	0.774	0.094	0.090 – 0.098
C. School Evaluation							
Models	**X²**	**Df**	**X²/ df**	**p**	**CFI**	**RMSEA**	**Range RMSEA**
Model 1 (Figure 3)	275	57	4,8	0.001	0.972	0.053	0.046 – 0.059
Model 2 (one factor model)	710	65	10,9	0.001	0.917	0.085	0.079 – 0.090

In Table 2.10, the fit indices that were produced from the SEM analysis in Slovenia are presented and as we can see, models 1 are the models that also best fit the data in Slovenia for the three overarching factors, and their fit indices are satisfactory (i.e. they reveal that the data meet the requirements of the model). These models (models

1) are again the same as the 3 models which were presented in Figures 1, 2 and 3 that were produced from the across country analysis. In addition, the loadings of the items and the factors are high and all the loadings are statistically significant. The structure of the three models for Slovenia is the same as the three across countries models and no further items had to be removed. The loadings are presented in Figures 5.1, 5.2 and 5.3 in Appendix D.

Based on the loadings of the items that occurred from the SEM analysis, as they appear in Figures 5.1, 5.2 and 5.3 (Appendix D) the factor scores which will be used for the multilevel analysis were produced.

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Appendix A

A1) Table 1: Missing values across countries

Items of the Teacher Questionnaire	Total across countries		
	Code 7	Code 8	Code 9
4A	0	5	49
4B	0	1	35
4C	0	7	39
4D	0	6	41
4E	0	3	41
5A	0	0	33
5B	0	10	93
5C	0	4	35
5D	0	7	62
5E	0	4	45
5F	0	13	41
5G	0	8	51
6A	0	11	112
6B	0	5	108
6C	358	9	57
7	0	90	166
8A	0	4	73
8B	0	4	78
8C	0	8	73
8D	0	4	111
8E	0	6	67
8F	0	2	60
8G	0	5	77
8H	0	5	67
8I	0	7	86
8J	0	6	75
8K	0	9	82
8L	0	7	85
8M	0	7	82
8N	0	7	72
8O	0	5	90
9	0	6	95
10	0	14	99
11A	0	5	97

11B	0	9	96
11C	0	6	97
12	0	14	108
13	0	6	52
14	0	14	53
15A	0	5	67
15B	0	4	89
15C	0	5	63
15D	0	5	69
15E	0	4	67
15F	0	10	71
16	0	6	65
17	0	7	57
18	0	13	56
19	0	17	67
20	0	16	48
21A	0	7	81
21B	0	5	63
21C	0	6	72
21D	0	10	75
22A	0	13	109
22B	0	14	100
22C	0	15	109
22D	0	17	105
23	0	16	95
24	0	13	78
25	0	10	73
26	0	11	88
27	0	16	68
28	0	14	85
29	0	6	59
30	0	4	64
31	0	11	103
32A	0	8	105
32B	0	9	125
32C	0	12	141
33	0	22	122
34	0	13	112
35	0	30	202
36	0	17	116
37	0	9	126
38	0	19	118

39	0	12	125
40	0	10	75
41	0	18	156
42	0	16	122
43	0	5	113

A2) Table 2: Missing values in Belgium

	Belgium		
Items of the Teacher Questionnaire	**Code 7**	**Code 8**	**Code 9**
4A	0	4	9
4B	0	1	7
4C	0	7	8
4D	0	5	6
4E	0	3	9
5A	0	0	1
5B	0	10	19
5C	0	1	0
5D	0	7	22
5E	0	3	6
5F	0	11	2
5G	0	7	12
6A	0	10	13
6B	0	5	13
6C	0	9	9
7	0	88	54
8A	0	3	14
8B	0	4	17
8C	0	6	16
8D	0	3	29
8E	0	5	8
8F	0	0	5
8G	0	3	16
8H	0	4	10
8I	0	6	13
8J	0	4	14
8K	0	7	25
8L	0	5	21
8M	0	5	16

8N	0	4	9
8O	0	5	8
9	0	5	9
10	0	11	23
11A	0	5	5
11B	0	6	6
11C	0	5	5
12	0	13	20
13	0	6	9
14	0	8	5
15A	0	5	6
15B	0	4	21
15C	0	4	7
15D	0	4	8
15E	0	3	6
15F	0	9	6
16	0	2	9
17	0	6	2
18	0	9	5
19	0	10	4
20	0	13	3
21A	0	6	11
21B	0	4	6
21C	0	5	7
21D	0	9	9
22A	0	11	28
22B	0	12	28
22C	0	14	29
22D	0	15	27
23	0	14	5
24	0	11	14
25	0	9	12
26	0	10	19
27	0	14	6
28	0	12	16
29	0	6	5
30	0	4	4
31	0	8	3
32A	0	6	3
32B	0	8	10
32C	0	10	17
33	0	17	15

34	0	11	11
35	0	28	39
36	0	14	10
37	0	7	15
38	0	15	14
39	0	12	17
40	0	14	7
41	0	17	33
42	0	14	23
43	0	4	18

A3) Table 3: Missing values in Cyprus

	Cyprus		
Items of the Teacher Questionnaire	Code 7	Code 8	Code 9
4A	0	0	1
4B	0	0	1
4C	0	0	1
4D	0	0	4
4E	0	0	3
5A	0	0	1
5B	0	0	2
5C	0	0	2
5D	0	0	2
5E	0	0	3
5F	0	0	4
5G	0	0	4
6A	0	0	6
6B	0	0	3
6C	0	0	9
7	0	0	3
8A	0	0	3
8B	0	0	2
8C	0	0	1
8D	0	0	1
8E	0	0	2
8F	0	0	2
8G	0	0	3
8H	0	0	1

8I	0	0	2
8J	0	0	3
8K	0	0	1
8L	0	0	2
8M	0	0	2
8N	0	0	2
8O	0	0	6
9	0	0	11
10	0	0	5
11A	0	0	7
11B	0	0	6
11C	0	0	6
12	0	0	5
13	0	0	2
14	0	0	3
15A	0	0	5
15B	0	0	4
15C	0	0	4
15D	0	0	4
15E	0	0	4
15F	0	0	3
16	0	0	4
17	0	0	3
18	0	0	2
19	0	0	4
20	0	0	3
21A	0	0	2
21B	0	0	3
21C	0	0	3
21D	0	0	2
22A	0	0	4
22B	0	0	2
22C	0	0	4
22D	0	0	3
23	0	0	6
24	0	0	6
25	0	0	4
26	0	0	4
27	0	0	5
28	0	0	5
29	0	0	5
30	0	0	6

31	0	0	14
32A	0	0	15
32B	0	0	11
32C	0	0	12
33	0	0	12
34	0	0	13
35	0	0	22
36	0	0	12
37	0	0	13
38	0	0	10
39	0	0	10
40	0	0	11
41	0	0	12
42	0	0	11
43	0	0	12

A4) Table 4: Missing values in Germany

	Germany		
Items of the Teacher Questionnaire	**Code 7**	**Code 8**	**Code 9**
4A	0	0	18
4B	0	0	17
4C	0	0	17
4D	0	0	22
4E	0	0	16
5A	0	0	25
5B	0	0	59
5C	0	0	28
5D	0	0	25
5E	0	1	25
5F	0	1	24
5G	0	1	23
6A	0	1	43
6B	0	0	44
6C	358	0	0
7	0	0	32
8A	0	1	40
8B	0	0	42
8C	0	1	40
8D	0	1	46

8E	0	1	40
8F	0	2	39
8G	0	1	43
8H	0	1	40
8I	0	0	54
8J	0	1	45
8K	0	1	43
8L	0	1	47
8M	0	1	49
8N	0	1	43
8O	0	1	46
9	0	0	48
10	0	0	51
11A	0	0	62
11B	0	1	64
11C	0	0	60
12	0	0	51
13	0	0	34
14	0	0	36
15A	0	0	47
15B	0	0	50
15C	0	0	43
15D	0	0	43
15E	0	0	4
15F	0	0	48
16	0	0	38
17	0	0	41
18	0	0	38
19	0	1	43
20	0	1	36
21A	0	0	58
21B	0	0	47
21C	0	0	52
21D	0	0	51
22A	0	0	52
22B	0	0	51
22C	0	0	56
22D	0	0	55
23	0	0	51
24	0	0	44
25	0	0	42
26	0	0	40

27	0	1	43
28	0	0	50
29	0	0	38
30	0	0	40
31	0	0	50
32A	0	0	63
32B	0	0	68
32C	0	0	71
33	0	0	55
34	0	0	57
35	0	0	75
36	0	0	63
37	0	0	62
38	0	0	55
39	0	0	64
40	0	0	45
41	0	0	65
42	0	0	58
43	0	0	56

A5) Table 5: Missing values in Ireland

	Ireland		
Items of the Teacher Questionnaire	Code 7	Code 8	Code 9
4A	0	0	3
4B	0	0	2
4C	0	0	5
4D	0	0	5
4E	0	0	4
5A	0	0	0
5B	0	0	4
5C	0	0	0
5D	0	0	2
5E	0	0	2
5F	0	0	3
5G	0	0	4
6A	0	0	2
6B	0	0	1
6C	0	0	2

7	0	0	29
8A	0	0	6
8B	0	0	5
8C	0	0	6
8D	0	0	8
8E	0	0	51
8F	0	0	8
8G	0	0	5
8H	0	0	5
8I	0	0	6
8J	0	0	6
8K	0	0	5
8L	0	0	7
8M	0	0	6
8N	0	0	8
8O	0	0	7
9	0	0	9
10	0	0	6
11A	0	0	8
11B	0	0	7
11C	0	0	7
12	0	0	11
13	0	0	4
14	0	0	3
15A	0	0	3
15B	0	0	5
15C	0	0	3
15D	0	0	5
15E	0	0	4
15F	0	0	4
16	0	0	3
17	0	0	3
18	0	0	6
19	0	0	4
20	0	0	2
21A	0	0	3
21B	0	0	1
21C	0	0	1
21D	0	0	3
22A	0	0	4
22B	0	0	5
22C	0	0	4

22D	0	0	4
23	0	0	3
24	0	0	6
25	0	0	3
26	0	0	12
27	0	0	1
28	0	0	4
29	0	0	1
30	0	0	1
31	0	0	2
32A	0	0	5
32B	0	0	13
32C	0	0	13
33	0	0	7
34	0	0	4
35	0	0	16
36	0	0	5
37	0	0	4
38	0	0	5
39	0	0	7
40	0	0	6
41	0	0	17
42	0	0	8
43	0	0	6

A6) Table 6: Missing values in Slovenia

	Slovenia		
Items of the Teacher Questionnaire	Code 7	Code 8	Code 9
4A	0	1	18
4B	0	0	8
4C	0	0	8
4D	0	1	4
4E	0	0	9
5A	0	0	6
5B	0	0	9
5C	0	3	5
5D	0	0	11
5E	0	0	9

5F	0	1	8
5G	0	0	8
6A	0	0	48
6B	0	0	47
6C	0	0	37
7	0	2	48
8A	0	0	10
8B	0	0	12
8C	0	1	10
8D	0	0	27
8E	0	0	11
8F	0	0	6
8G	0	1	10
8H	0	0	11
8I	0	1	11
8J	0	1	7
8K	0	1	8
8L	0	1	8
8M	0	1	9
8N	0	2	10
8O	0	1	19
9	0	1	18
10	0	1	14
11A	0	0	15
11B	0	2	13
11C	0	1	19
12	0	1	21
13	0	0	3
14	0	6	6
15A	0	0	6
15B	0	0	9
15C	0	1	6
15D	0	1	9
15E	0	1	10
15F	0	1	10
16	0	4	11
17	0	1	8
18	0	4	5
19	0	6	12
20	0	2	4
21A	0	1	7
21B	0	1	6

21C	0	1	9
21D	0	1	10
22A	0	2	21
22B	0	2	14
22C	0	1	16
22D	0	2	16
23	0	2	30
24	0	2	8
25	0	1	12
26	0	1	13
27	0	1	13
28	0	2	10
29	0	0	10
30	0	0	13
31	0	3	34
32A	0	2	19
32B	0	1	23
32C	0	2	28
33	0	5	33
34	0	2	27
35	0	2	50
36	0	3	26
37	0	2	32
38	0	4	34
39	0	0	27
40	0	0	19
41	0	1	29
42	0	2	22
43	0	1	21

A7) Table 7: Results of the ANOVA analysis across countries

	F	Sig.
4A	3,106	,000
4B	2,417	,000
4C	3,090	,000
4D	2,746	,000
4E	2,464	,000
5A	2,447	,000
5B	2,469	,000
5C	4,564	,000
5D	3,086	,000

5E	2,126	,000
5F	2,570	,000
5G	2,069	,000
6A	3,341	,000
6B	3,122	,000
6C	3,115	,000
V7	3,650	,000
8A	3,030	,000
8B	2,909	,000
8C	3,435	,000
8D	3,279	,000
8E	2,853	,000
8F	3,309	,000
8G	3,350	,000
8H	2,025	,000
8I	4,772	,000
8J	2,715	,000
8K	2,692	,000
8L	2,308	,000
8M	2,275	,000
8N	2,405	,000
8O	2,373	,000
V9	2,498	,000
V10	3,320	,000
11A	3,613	,000
11B	3,995	,000
11C	2,993	,000
V12	2,966	,000
V13	2,852	,000
V14	3,050	,000
15A	2,975	,000
15B	2,625	,000
15C	2,735	,000
15D	2,549	,000
15E	2,760	,000
15F	2,011	,000
V16	7,851	,000
V17	3,034	,000
V18	3,037	,000
V19	2,864	,000
V20	8,527	,000
21A	4,025	,000
21B	3,294	,000
21C	2,535	,000
21D	2,254	,000

22A	3,571	,000
22B	2,588	,000
22C	3,024	,000
22D	3,118	,000
V23	2,271	,000
V24	3,958	,000
V25	4,074	,000
V26	2,709	,000
V27	2,920	,000
V28	3,768	,000
V29	3,474	,000
V30	3,863	,000
V31	4,876	,000
32A	3,136	,000
32B	3,882	,000
32C	4,234	,000
V33	3,570	,000
V34	3,012	,000
V35	3,593	,000
V36	3,763	,000
V37	3,125	,000
V38	3,341	,000
V39	3,264	,000
V40	2,614	,000
V41	2,276	,000
V42	2,723	,000
V43	2,432	,000

SURVEY OF PRIMARY SCHOOLS

Dear Teacher,

The [name of institution] is carrying out research on how children get on in Grade 4 of primary school. This research is being carried out in a number of schools around the country and in other European countries. We would appreciate it if you could find the time to complete this questionnaire, it should take no more than 35 minutes. Your views are very important, as they will help develop policies to assist students, parents and school staff. All the information you give will be strictly **confidential** and <u>will be used for research purposes only</u>.

This study aims in investigating teachers' opinions on their school's policy. This study mainly examines the policy developed by your school with respect to the following aspects of teaching:

A. Making good use of teaching time
As far as the use of the teaching time is concerned issues related to management of time, student absenteeism, teacher absenteeism, homework assignment, school time-table scheduling and teaching time spent on extra-curriculum activities (e.g., practice time for school events) are examined.

B. Provision of learning opportunities:
The school policy is examined in relation to the achievement of specific goals set by the school, use of visual material and technological equipment in teaching, dealing with students that have educational needs (e.g., gifted children, children with learning difficulties, children with special interests) as well as the long-term planning of teaching by the teachers.

C. Quality of teaching:
The school policy is examined in relation to the following factors concerned with the teacher behaviour in the classroom: Student evaluation, structuring, orientation of students in achieving specific goals, application exercises, posing and using questions in teaching, use of learning strategies, time management, and classroom as a learning environment.

Your views about the policy on the broader learning environment of your school are also examined. Four aspects of the **School Learning Environment (SLE)** are taken into account:

- policy on student behavior outside the classroom
- teacher collaboration
- relations with parents and the wider school community
- use of educational resources

Thank you very much for your help.

Put a √ in the appropriate box or fill where necessary:

Q1.   Are you male or female?

Male………□₁   Female………□₂

Q2.   What is your teaching position in this school?

Teacher………□₁   Deputy Head Teacher/Principal ………□₂ Head Teacher/Principal ………□₃

Q3. How many years have you been teaching at primary school level? (Please count this school year and exclude career breaks)

     (a) in this school……………….._____years
     (b) in other primary schools……_____years
     (c) Total…………………………_____years

PART B: THE FORMATION OF SCHOOL POLICY AND THE LEARNING ENVIRONMENT OF THE SCHOOL

Part B refers to statements concerned with practices that may occur in your school. Please circle a number from 1-4 on each line to show the extent to which you agree with the statements describing what happens in your school. After reading carefully each statement circle the number:

     1: if you **strongly disagree** with the statement
     2: if you **disagree** with the statement
     3: if you **agree** with the statement
     4: if you **strongly agree** with the statement

		Strongly Disagree	Disagree	Agree	Strongly Agree
Q4.	At staff meetings in our school we discuss and take decisions on issues concerned with:				
	a. Making good use of teaching time	1	2	3	4
	b. Provision of extra learning opportunities in addition to those offered by the formal curriculum (e.g., extra-curricular activities, festivals, fairs, school trips, clubs)	1	2	3	4
	c. Methods to effectively teach students (e.g., structuring lessons, questioning, application, student assessment etc.)	1	2	3	4
	d. Teacher's role during break time	1	2	3	4
	e. Developing trust between teachers and children	1	2	3	4
Q5.	My school keeps systematic records concerned with:				
	a. Student absenteeism	1	2	3	4
	b. Teacher absenteeism	1	2	3	4
	c. Special educational needs of students	1	2	3	4
	d. Long-term planning by teachers	1	2	3	4
	e. Organization of trips, visits and other extra-curricular activities not included in the formal curriculum	1	2	3	4
	f. Problems that arise among students during break time	1	2	3	4
	g. The use of educational tools for teaching supplied by the school (e.g., maps, software etc.)	1	2	3	4
Q6.	My school participates in programmes (e.g., Comenius, action research projects, collaboration with other schools, pilot initiatives) that aim at:				
	a. Making good use of teaching time	1	2	3	4
	b. Providing learning opportunities beyond the ones offered by the formal curriculum	1	2	3	4
	c. Improving the quality of teaching	1	2	3	4
Q7.	When designing the school-timetable we take into account that enough time should be provided for students and/or teachers to move between classrooms	1	2	3	4

		Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
Q8.	I feel that I am positively influenced by the staff meetings in relation to the following:				
	a. Management of teaching time	1	2	3	4
	b. Dealing with student absenteeism	1	2	3	4
	c. Homework	1	2	3	4
	d. Making good use of teaching time that is spent on activities not included in the formal curriculum (e.g. rehearsals)	1	2	3	4
	e. Use of visual aids and technological equipment in teaching (e.g. overhead projector, computer)	1	2	3	4
	f. Dealing with students that have special educational needs (e.g., gifted children, children with learning disabilities, children with special interests)	1	2	3	4
	g. Long-term planning of teaching	1	2	3	4
	h. Interaction with students during break time	1	2	3	4
	i. Student evaluation	1	2	3	4
	j. Structuring of lessons	1	2	3	4
	k. Student orientation (i.e., helping students to understand why a unit is taught)	1	2	3	4
	l. Using exercises to help students apply their learning (i.e., giving them tasks which apply the concepts taught to a situation in everyday life)	1	2	3	4
	m. Asking questions and making good use of them	1	2	3	4
	n. Strategies for learning	1	2	3	4
	o. The learning environment of the classroom (e.g., promoting interaction among students)	1	2	3	4
Q9.	My school takes into consideration the professional needs of each teacher and does not expect each teacher to implement the school policy for teaching in the same way (the school policy being what is decided at the school level regarding quantity and quality of education, providing learning opportunities ...)	1	2	3	4

		Strongly	**Disagree**	**Agree**	**Strongly**

		Disagree			Agree
Q10.	We take into account research findings (e.g., recently published articles in scientific journals, results of research studies) in developing the school policy on teaching	1	2	3	4
Q11.	We take into account research findings when we form a school policy concerned with:				
	a. parental involvement	1	2	3	4
	b. teacher collaboration	1	2	3	4
	c. use of resources for teaching provided by the school	1	2	3	4
Q12.	Incentives are provided and/or support is given to teachers to implement the school policy on teaching (e.g., reward teachers who spend extra time with students who were absent from school in order to explain to them the concepts taught during their absenteeism)	1	2	3	4
Q13.	My school encourages teachers to cooperate with the parents of children who struggle academically	1	2	3	4
Q14.	The teachers in my school cooperate with each other by exchanging ideas and material when teaching specific units or series of lessons.	1	2	3	4
Q15.	Discussions at staff meetings help me to improve my practice in:				
	a. Making good use of teaching time	1	2	3	4
	b. Providing learning opportunities to students beyond the ones offered by the formal curriculum	1	2	3	4
	c. My teaching behaviour in the classroom	1	2	3	4
	d. My role during break time	1	2	3	4
	e. Using different educational tools for teaching provided by the school	1	2	3	4
	f. Involving parents in the learning process	1	2	3	4
Q16.	In my school, teachers observe each other teaching as a way to discuss and share opinions on effective teaching	1	2	3	4
Q17.	The teachers in my school participate in educational school-based seminars (e.g., workshops) which deal with **specific** issues that the school faces	1	2	3	4
Q18.	My school has formed a **specific** policy for student behaviour during break time	1	2	3	4

		Strongly Disagree	Disagree	Agree	Strongly Agree
Q19.	In my school we share the opinion that break time is an opportunity for teachers to approach and interact with children that face problems which may affect their learning	1	2	3	4
Q20.	In my school, we have taken the decision to organize fun activities during break time that may help students to achieve specific learning goals (e.g., games, dance, sports)	1	2	3	4
Q21.	In parent-teacher meetings organized by the school, the way in which parents can help in dealing with the following issues are discussed:				
	a. Student absenteeism	1	2	3	4
	b. Homework	1	2	3	4
	c. Addressing children's educational needs (e.g., gifted children, children with learning difficulties, children with special interests)	1	2	3	4
	d. Parents providing learning opportunities in the school through activities organized on their own initiative (e.g., educational visits, educational games)	1	2	3	4
Q22.	There is material on notice-boards in the school relevant to:				
	a. Good use of teaching time	1	2	3	4
	b. Provision of learning opportunities beyond the ones provided by the formal curriculum	1	2	3	4
	c. Characteristics of effective teaching	1	2	3	4
	d. The use of different educational tools for teaching provided by the school	1	2	3	4
Q23.	At staff meetings, we usually make decisions on the ways in which parents can be involved in the learning process	1	2	3	4
Q24.	During break time, the teachers spend more time with students who face learning difficulties than with other students	1	2	3	4
Q25.	Parents are often invited to our school to observe teaching so that they are aware of the policy the classroom teacher adopts	1	2	3	4
Q26.	My school has a **clear** policy for parental involvement in the learning process	1	2	3	4
Q27.	In my school, there is an opportunity for different groups/people outside the school to become involved with and cooperate in the **learning process** of (for example, a basketball player of a local team together with teachers teaches different basketball techniques)	1	2	3	4

		Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
Q28.	Discussions at staff meetings lead to an improvement in the way in which the school offers teachers opportunities for professional development and training	1	2	3	4
Q29.	My school invites specialists in to conduct in-service training for teachers (e.g., an expert that works on developing students' creativity or other types of in-service)	1	2	3	4
Q30.	The management team (principal and deputy heads) organizes in-service seminars for a specific group of teachers when they think it is needed (e.g., newly appointed teachers)	1	2	3	4

PART C: EVALUATION OF SCHOOL POLICY

This section is concerned with the evaluation of school policy. To answer questions in Part C, please circle a number from 1-4 on each line to show the extent to which you agree with each statement describing what happens in your school. After reading carefully each statement circle the number:

- 1: if you **strongly disagree** with the statement
- 2: if you **disagree** with the statement
- 3: if you **agree** with the statement
- 4: if you **strongly agree** with the statement

		Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
Q31.	The principal and/or other members of the school staff observe the way the teaching policy is put into practice and presents the results of their observations to staff	1	2	3	4
Q32.	To evaluate the implementation of the school policy on teaching, we collect information from:				
	a. Teachers	1	2	3	4
	b. Students	1	2	3	4
	c. Parents	1	2	3	4
Q33.	Teachers' **capacity** to implement the school policy on teaching (e.g. quantity of education, quality of education, provision of learning opportunities for students)is evaluated within the school	1	2	3	4
Q34.	Information collected during evaluation of the school policy on teaching is used for re-designing the policy or for taking new decisions	1	2	3	4

		Strongly Disagree	Disagree	Agree	Strongly Agree
Q35.	The results of the evaluation of the school policy on teaching are used by the school **principal** for the summative evaluation of teachers (e.g. career development purposes)	1	2	3	4
Q36.	We evaluate the extent to which student discipline problems during break time **are reduced** as a result of the school policy	1	2	3	4
Q37.	Aspects of my school's policy on teaching which are considered problematic are evaluated **further** and/or **in more detail**	1	2	3	4
Q38.	The principal and/or school staff observe the implementation of the learning environment policy and present the results of their observations to staff	1	2	3	4
Q39.	Aspects of my school's policy concerned with the broader learning environment which are considered problematic are evaluated **further** and/or **in more detail**	1	2	3	4
Q40.	Our school identifies the professional development/further education needs of its teachers	1	2	3	4
Q41.	The evaluation of the school policy on the broader learning environment (e.g. further (school climate, students' behaviour outside the classroom, the cooperation and interaction between teachers, the support of teachers and students, the learning objectives ...) is carried out in a way that refers to **a single aspect** of the policy each time (i.e., evaluation focuses on student behaviour, relations with parents etc. separately)	1	2	3	4
Q42.	Information collected during the evaluation of the policy on the broader learning environment is used for re-designing the policy or for taking new decisions	1	2	3	4
Q43.	School policy evaluation results are useful to pinpoint areas in teaching for which we need support and/or further training	1	2	3	4

In the space provided below, please put down anything you consider important for the development and the evaluation of a school policy concerned with teaching and the learning environment of your school.

_____

_____

_____

_____

_____

_____

Thank you very much for your cooperation.

Appendix C

Specification Table: Items of the teachers' questionnaire by school factor

	Items of the Teacher Questionnaire per school factor
School Factors	
A. School Policy on teaching	
Quantity of teaching	4A, 6A, 7, 8A, 8B, 8C, 15A, 22A
Provision of learning opportunities	4B, 5D, 5E, 6B, 8D, 8F, 8G, 8H, 15B, 19, 22B, 24
Quality of teaching	4C, 6C, 8I, 8J, 8K, 8L, 8M, 8N,8O, 9, 12,15C, 10, 22C
B. Policy on the school learning environment	
Student behavior outside the classroom	4D, 15D, 20, 18
Collaboration and interaction between teachers	4E, 11B, 16, 14
Partnership policy	11A, 13,15F, 21A, 21B, 21C, 21D, 23, 25, 26, 27
Provision of sufficient learning resources	8E, 11C, 15E, 22D
Relation with Community	17, 28, 29, 30

C. Evaluation of the school policy on teaching
5A, 5B, 5C, 31, 32A, 32B, 32C, 33, 34, 37,35
D. Evaluation of the learning environment
5F, 5G,36, 38, 39, 40, 41, 42, 43

Appendix D

Figures with the second-order factor models of the teacher questionnaire measuring school factors with factor parameter estimates for the within country analysis

1.1) Belgium figure for Policy on Teaching
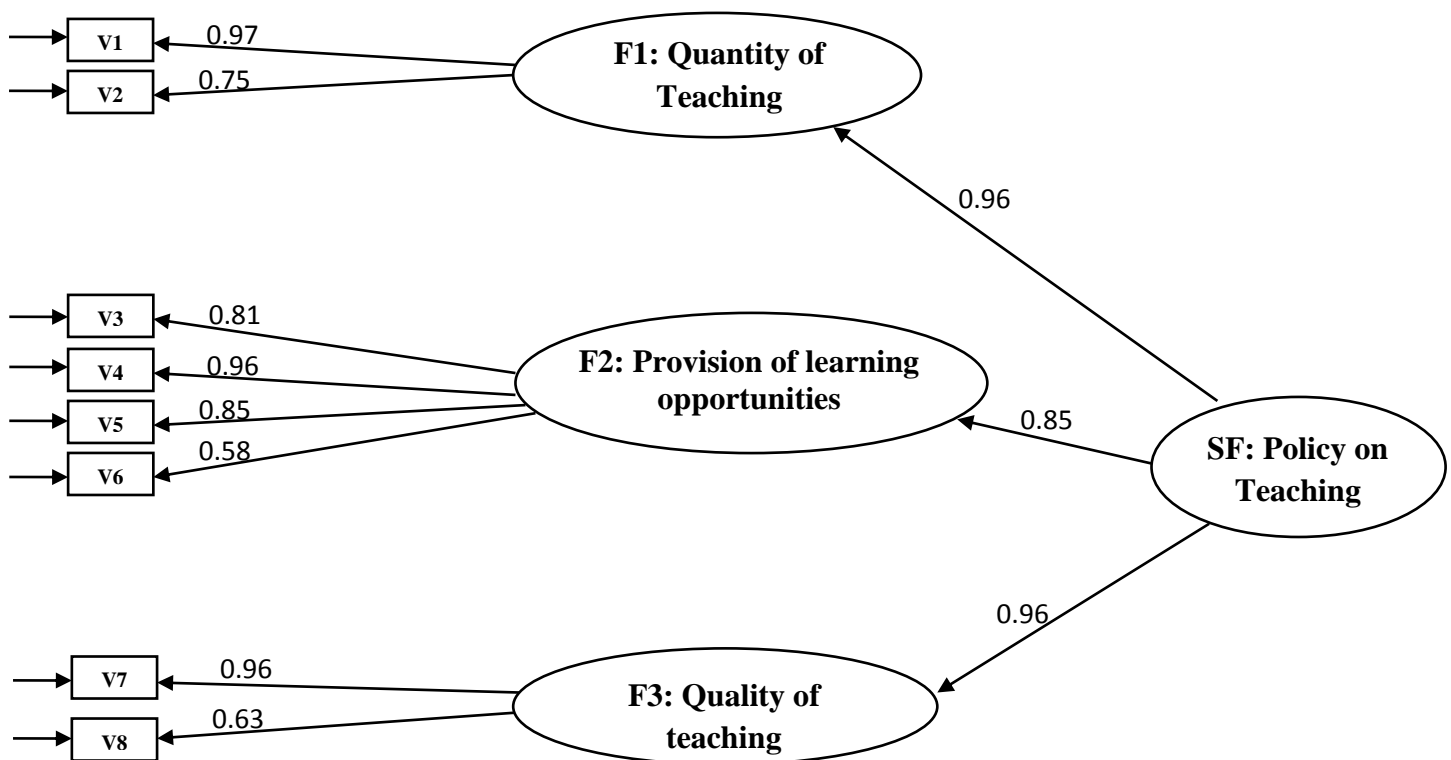
1.2) Belgium figure for Policy on the SLE
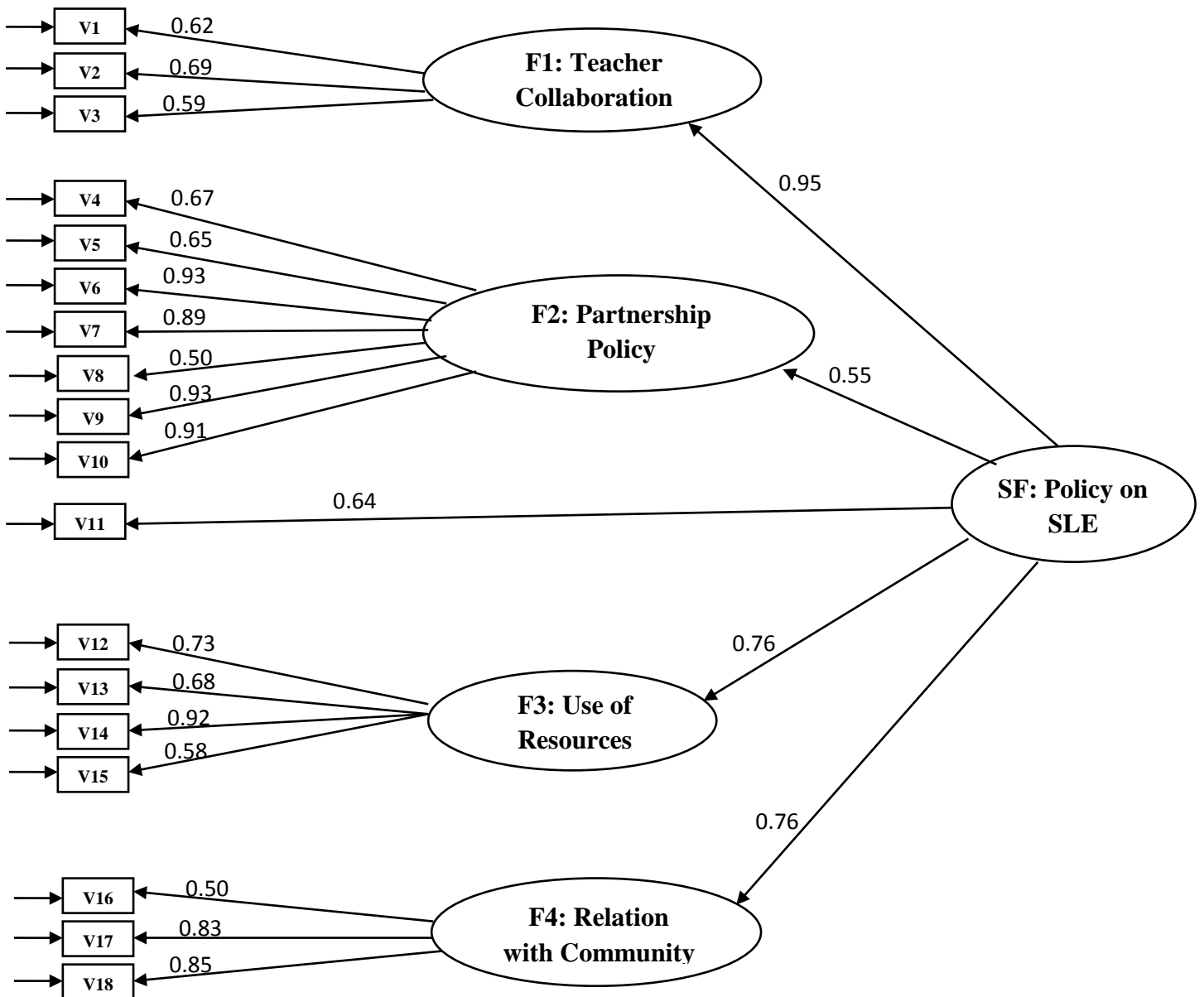
1.3) Belgium figure for Policy on Evaluation
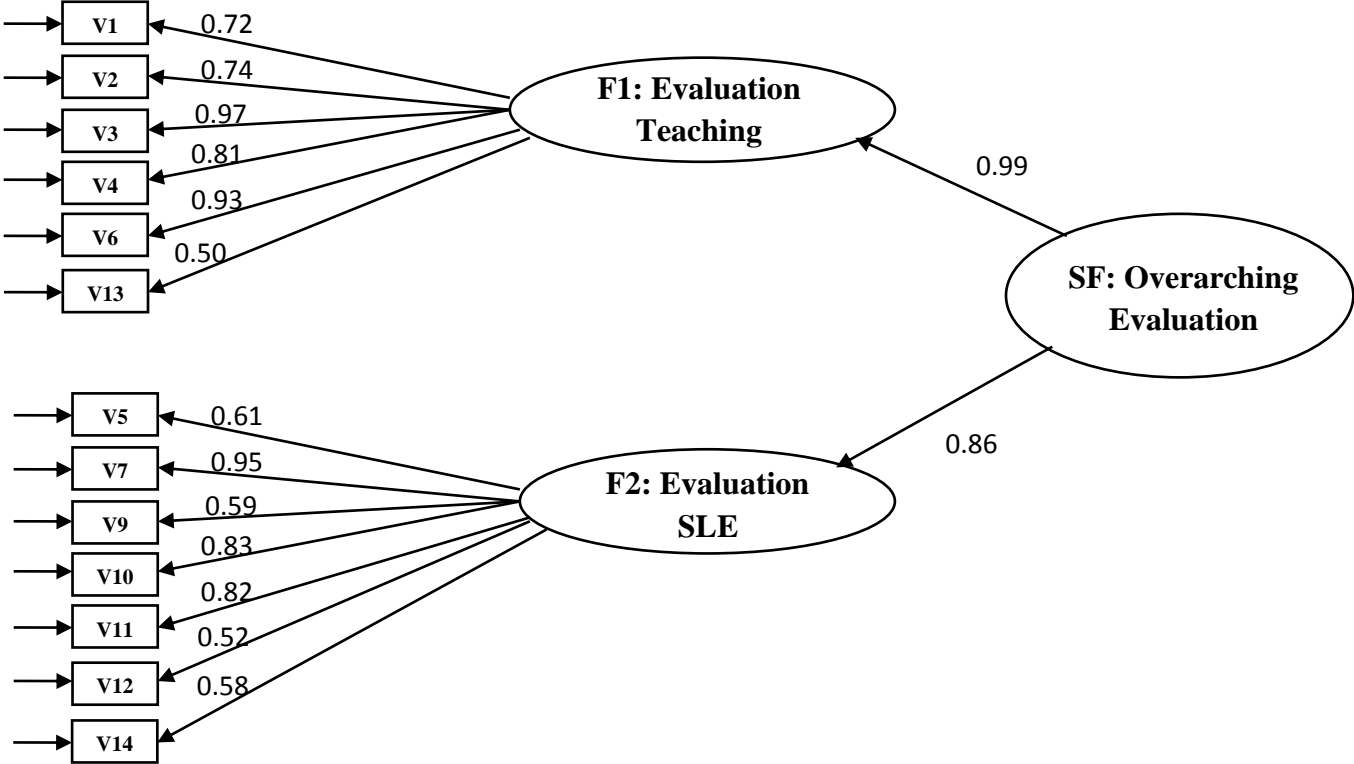
2.1) Cyprus figure for Policy on Teaching
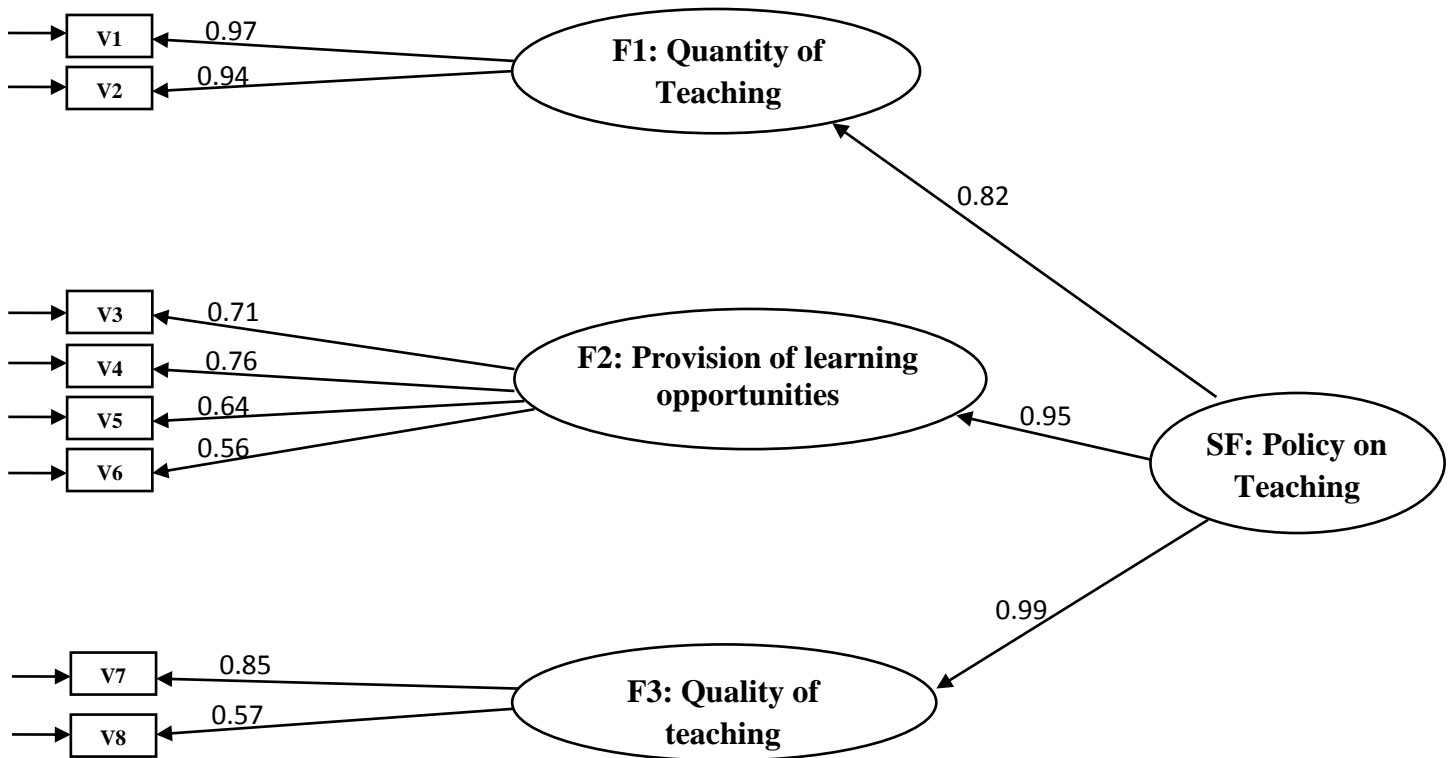
2.2) Cyprus figure for Policy on the SLE
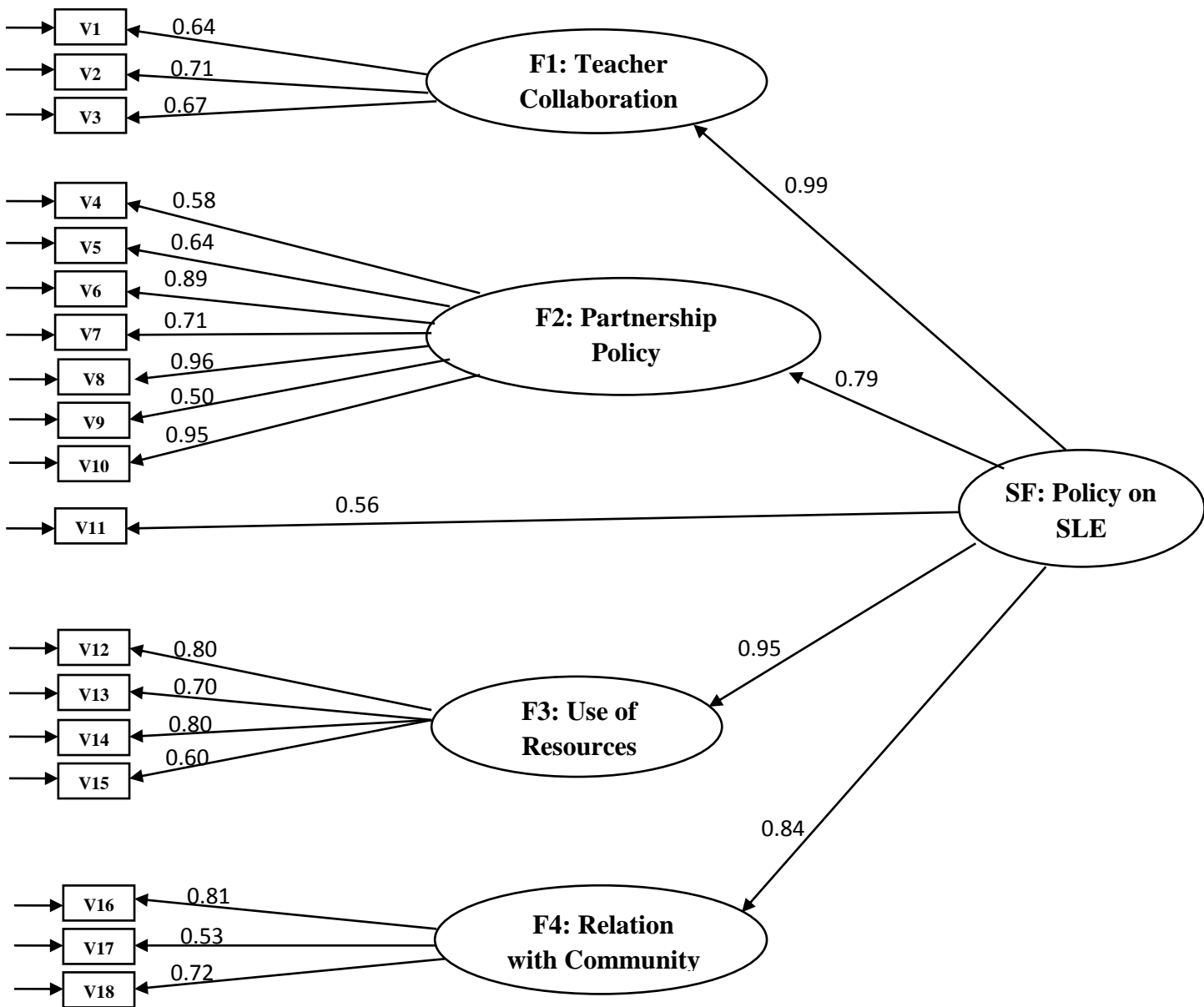
2.3) Cyprus figure for Policy on Evaluation
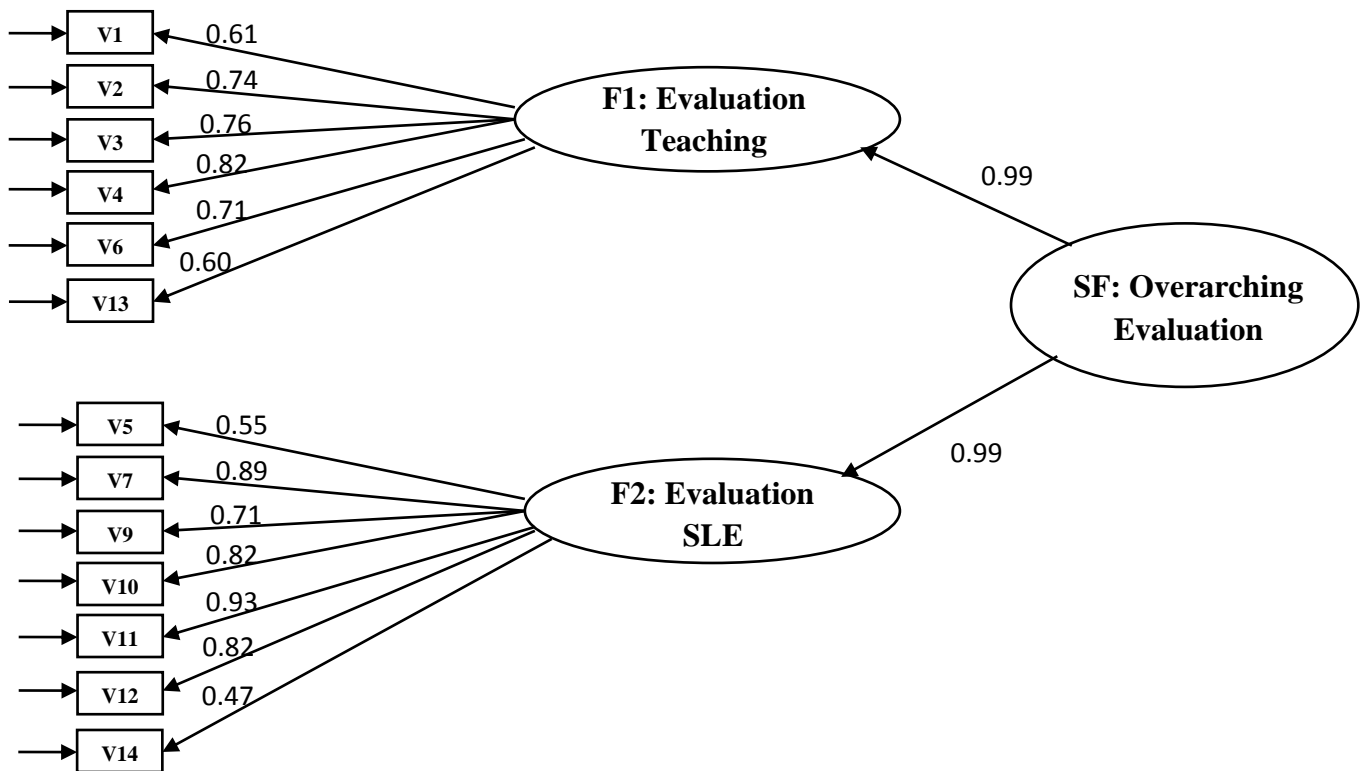
3.1) Germany figure for Policy on Teaching
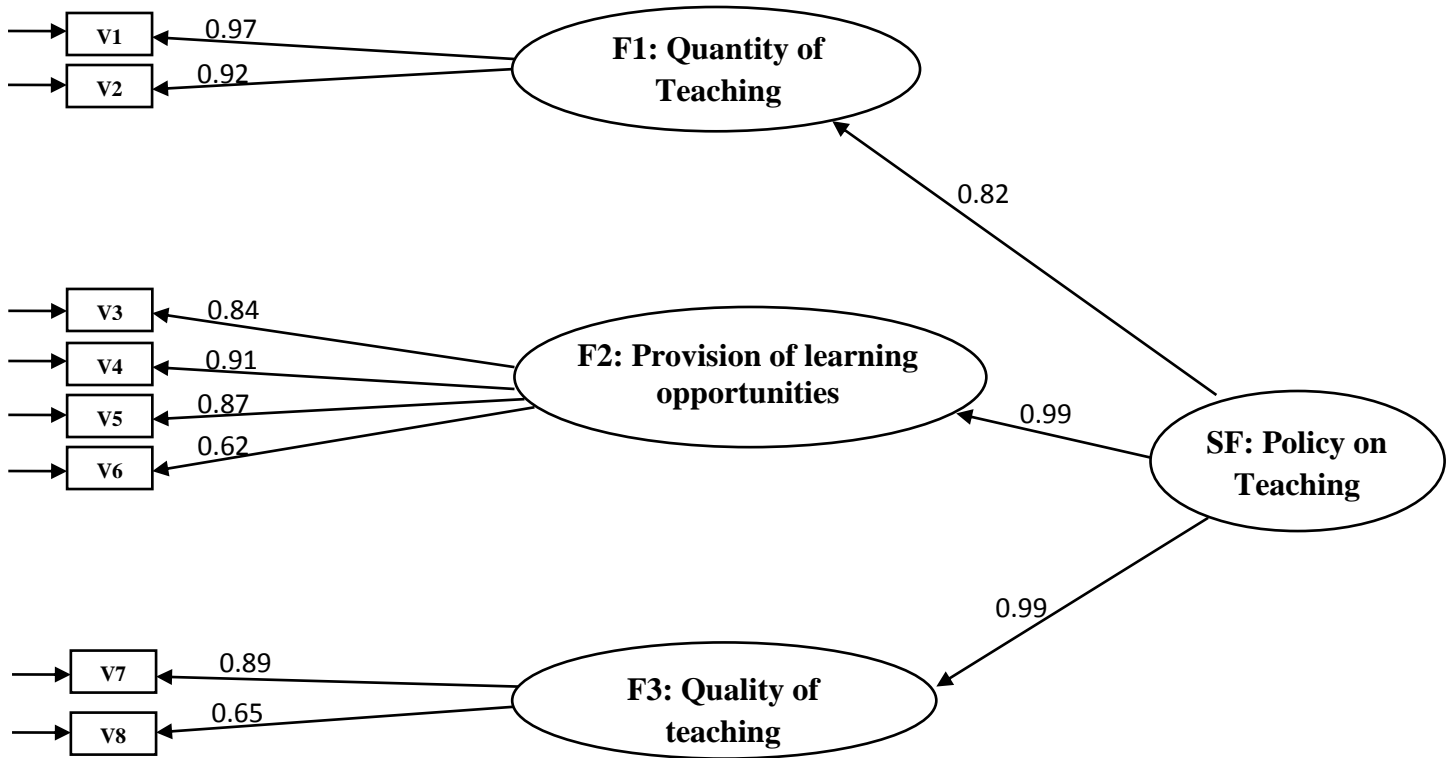
3.2) Germany figure for Policy on the SLE
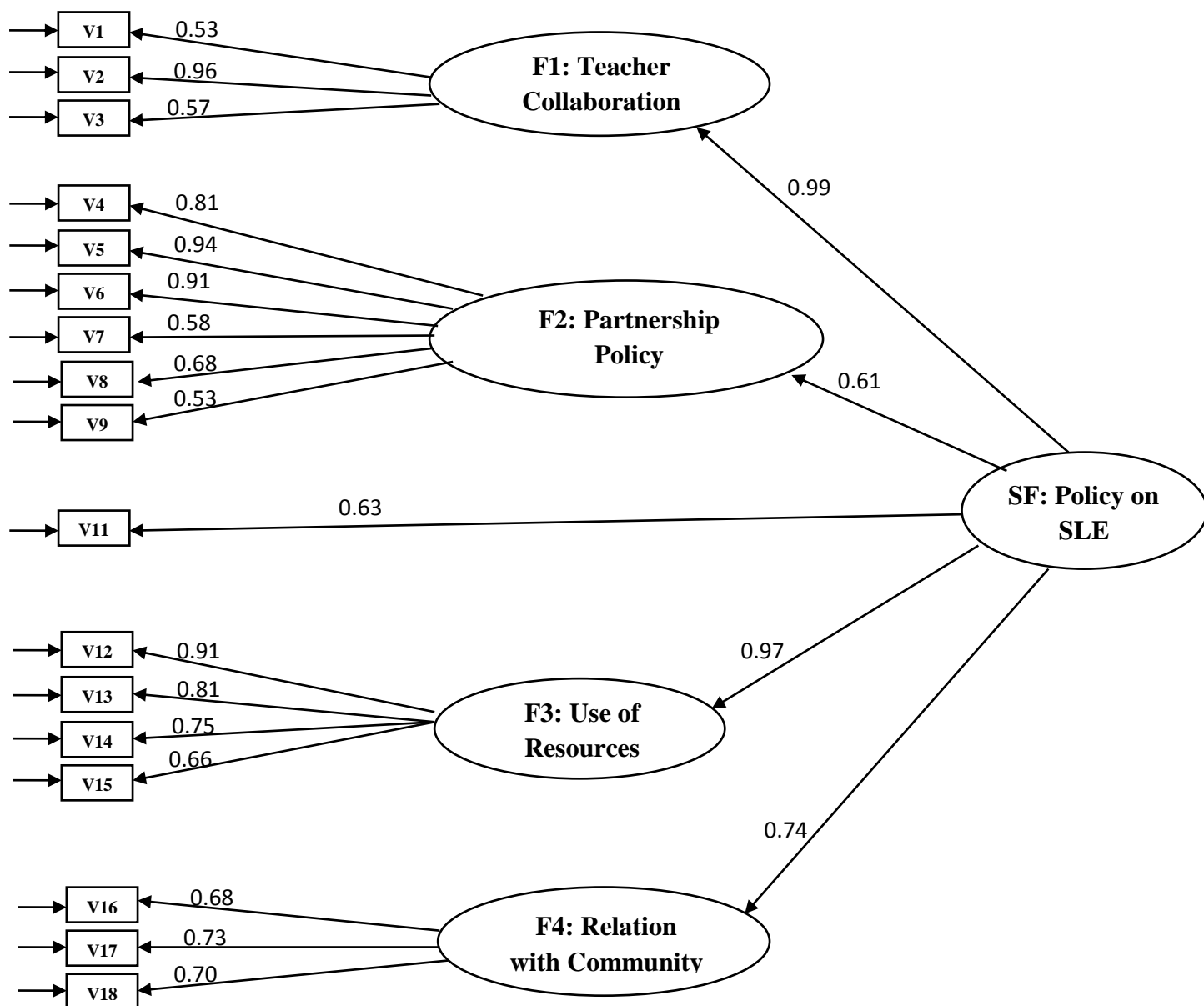
3.3) Germany figure for Policy on Evaluation
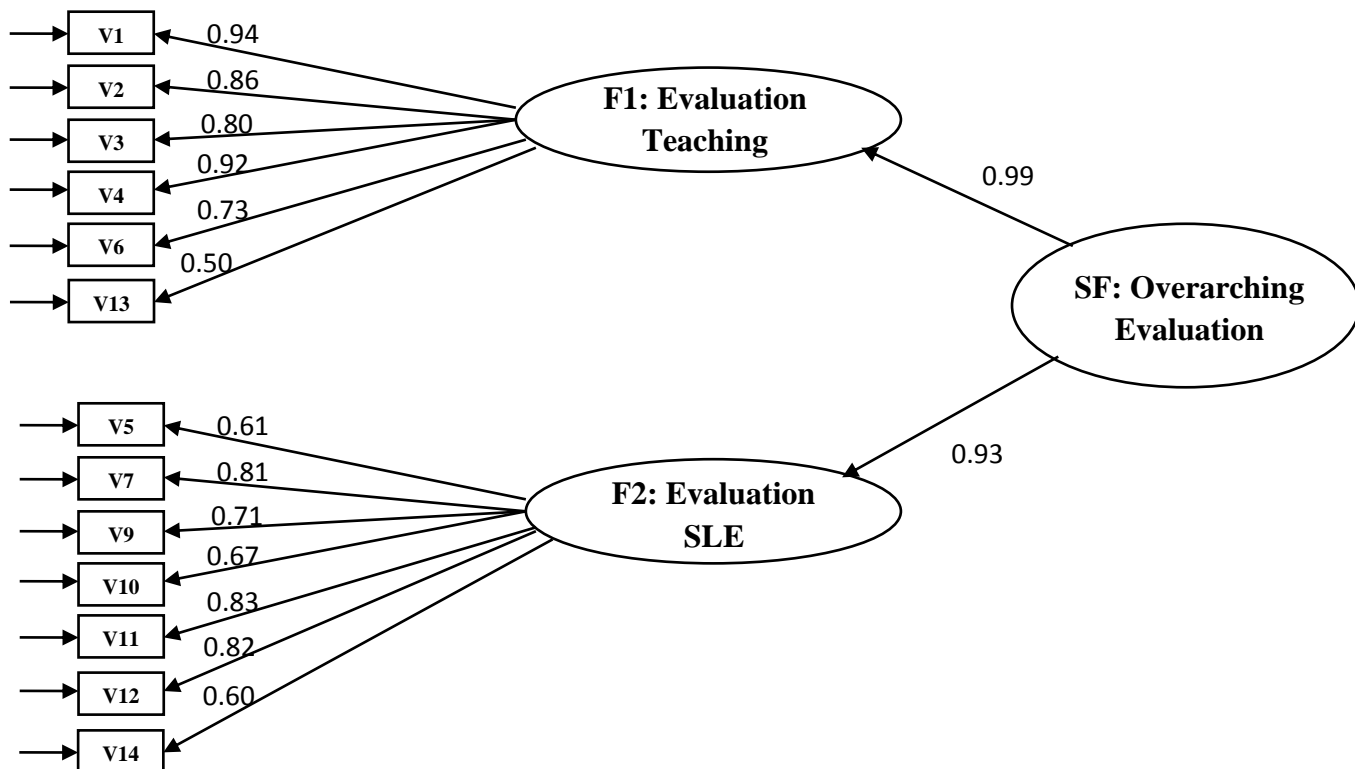
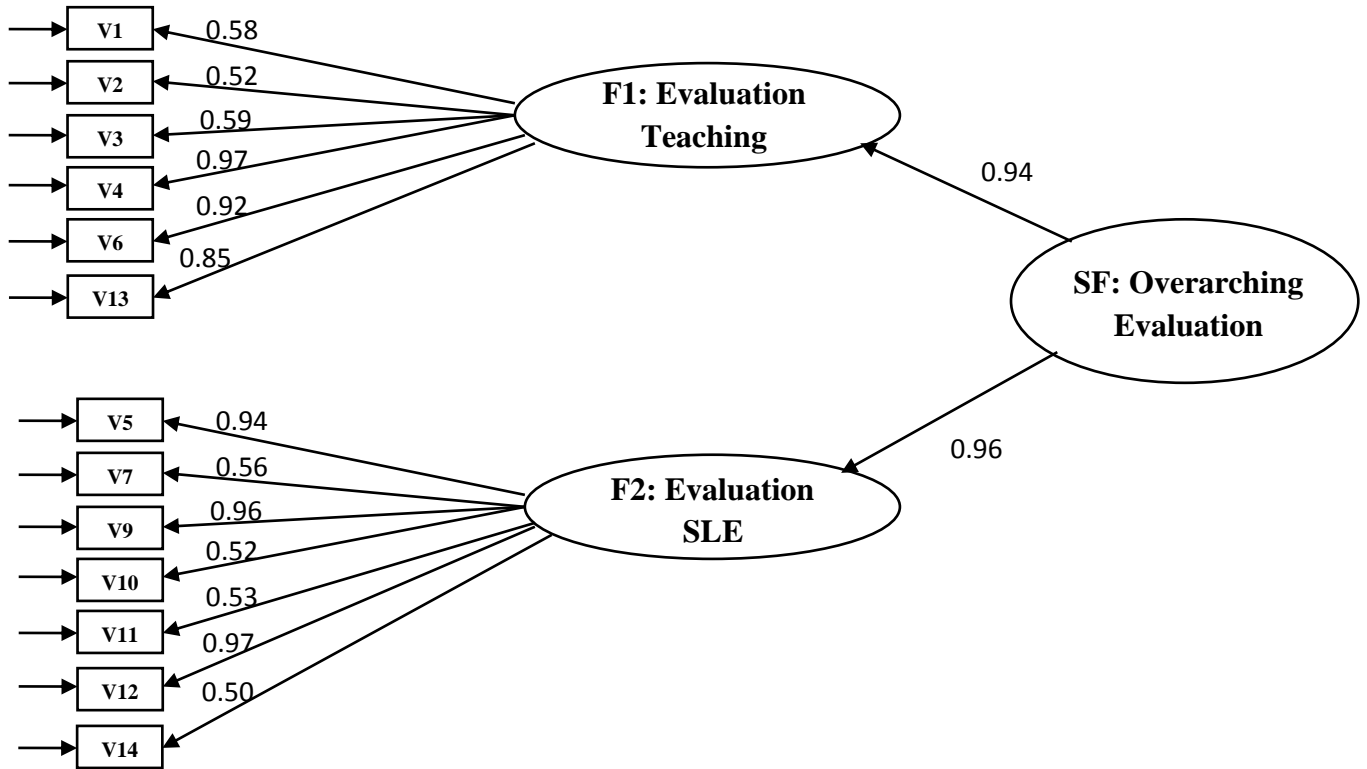**4.1) Ireland figure for Policy on Teaching**
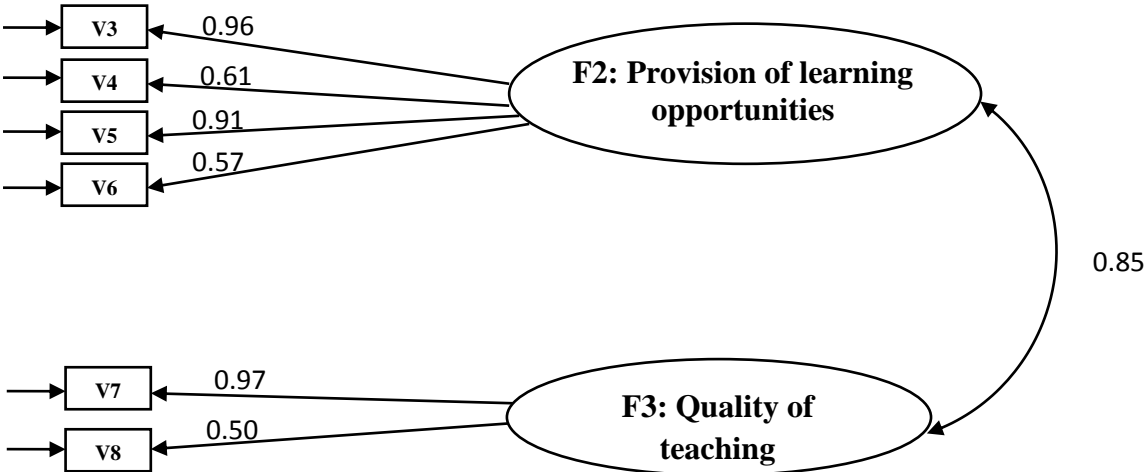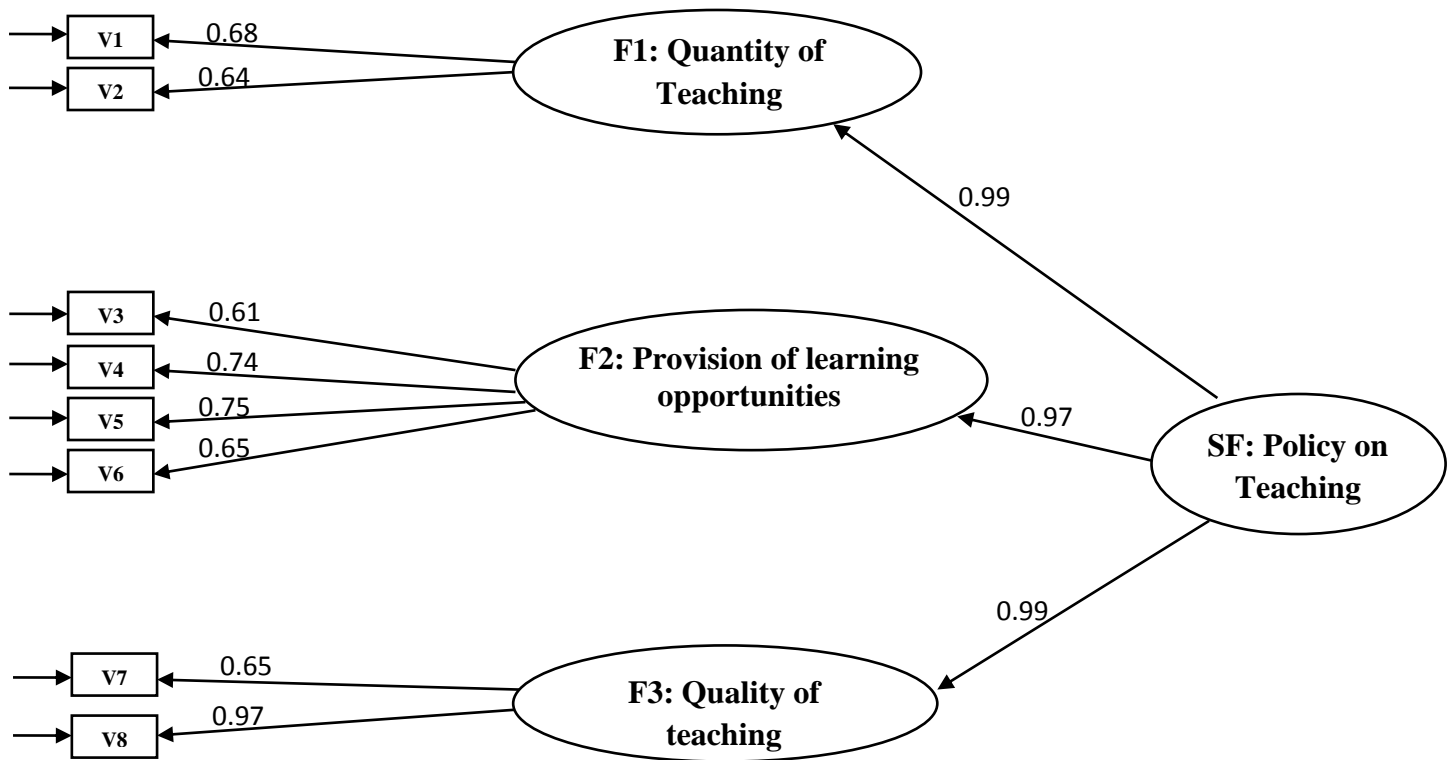
4.2) Ireland figure for Policy on the SLE
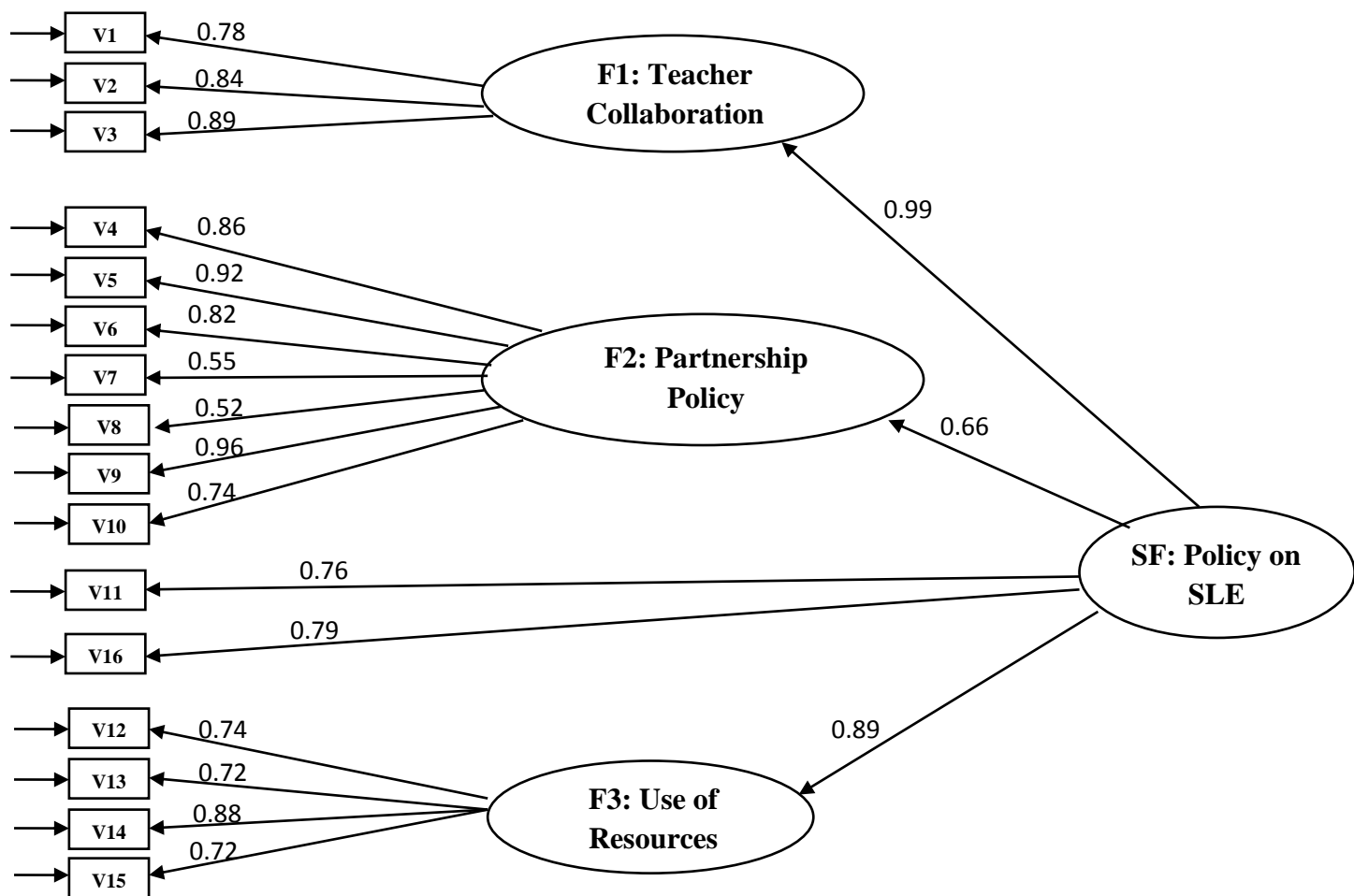
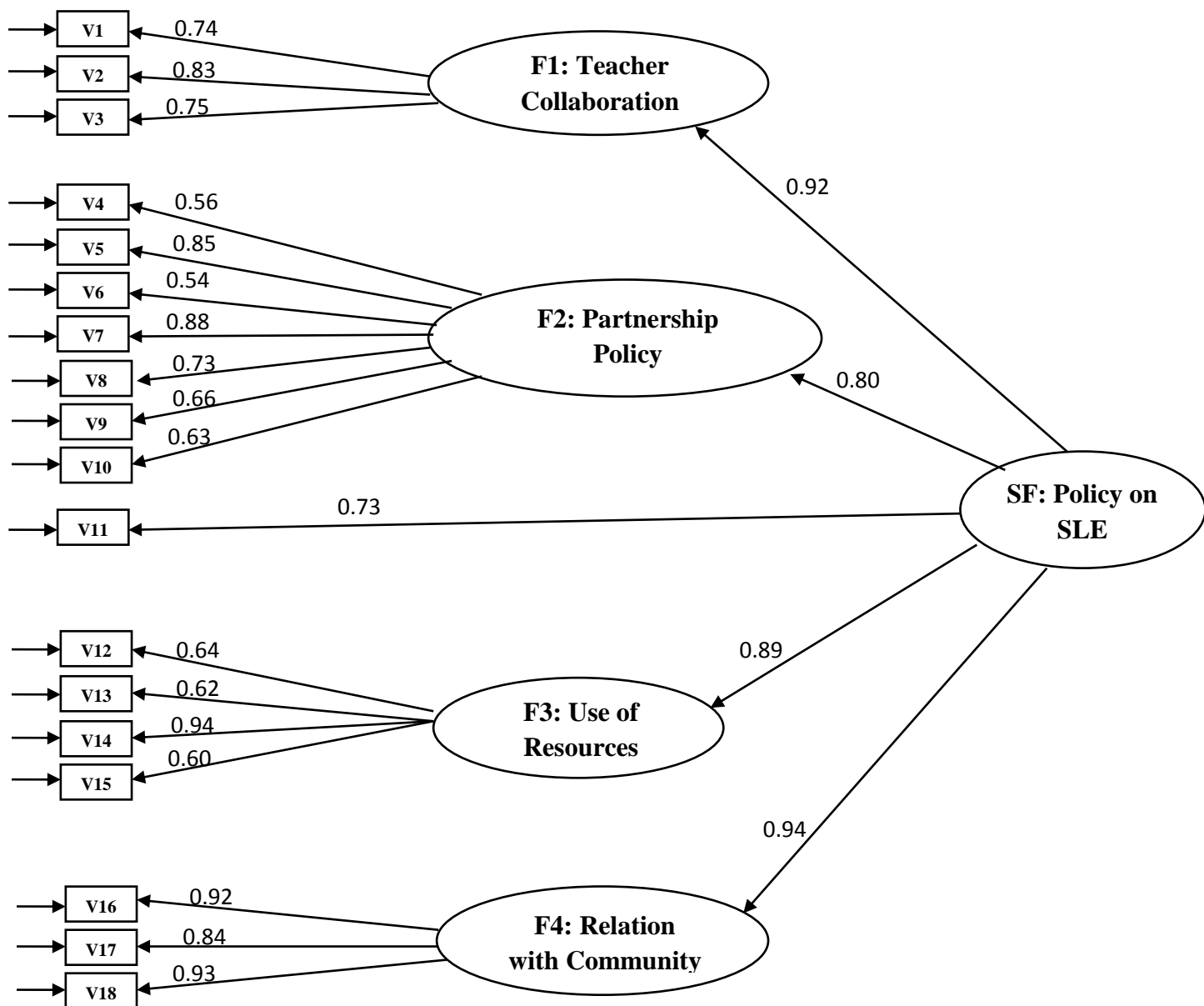**4.3) Ireland figure for Policy on Evaluation**

5.1) Slovenia figure for Policy on Teaching

5.2) Slovenia figure for Policy on the SLE

5.3) Slovenia figure for Policy on Evaluation