MEDINE2 Work Package 5

Curriculum Trends in Medical Education in Europe in the 21st Century

Catherine Kennedy[1], Pat Lilley[1,] Levente Kiss[2], Levente Littvay[3] and Ronald Harden[1]

[1]Association for Medical Education in Europe, Dundee, UK
[2]Semmelweis University, Budapest, Hungary
[3]Central European University, Budapest, Hungary

Contact details:
AMEE, 484 Perth Road, Dundee DD2 1LR, UK
amee@dundee.ac.uk www.amee.org

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Executive Summary

1. Study aims

Advances in medicine, changes in healthcare delivery, new approaches to teaching and learning, and technological developments have led to a re-examining of curricula in medical schools across Europe. This research, conducted by Work Package 5 Taskforce and AMEE as part of the MEDINE2 Project, has sought to identify the range of curriculum trends within medical education, and explore the current position and aspirations regarding their implementation in medical schools across Europe and further afield. Concerns expressed in relation to the perceived obstacles to implementing some curriculum trends that were raised during this initial study, led to a second survey which sought to identify the obstacles to curriculum change in medical education.

2. Use of the study results

This study provides a useful insight into current trends in medical education and as such should be of interest to policy makers, deans of medical schools, curriculum and course leaders, teachers, researchers, administrators and students. It identifies current trends relating to students admitted to medical studies, the education programme and the expected attributes of the doctor produced. It identifies a vision for the future development of medical education over the next three years. The information provided can contribute to decisions taken by the stakeholders when a curriculum is revised and further development planned. The report should be of interest also to those responsible for accreditation procedures and national and international policy relating to the training of doctors. The trends identified in the report have been related to the ten Bologna dimensions.

3. Curriculum Trends Survey

The initial research involving an exploratory review of academic and policy-related literature, and participatory discussions with medical education experts identified 82 curriculum trends relating to developments in three areas: the graduated doctor; the student entering medical studies; and the education process itself. A quantitative survey questionnaire was produced and distributed to individuals directly connected to medical education in order to gather evidence as to the current position of the identified curriculum trends, and the vision for each trend over the next 3-5 years.

4. Obstacles to Curriculum Change Survey

A second survey questionnaire was used to gather evidence on the possible obstacles to the implementation of the curriculum trends in relation to four areas: factors that favoured the status quo in the institution; perceived problems relating to the proposed change; factors associated with the cost of implementing the change; and factors associated with the process of change.

5. Current Curriculum Trends

5.1. Almost all of the 82 trends initially identified were reported by some respondents as a minor or a major trend in their school. Seven were identified by respondents as major current trends in their institutions, 71 as minor trends and four as not significant trends.

Significant differences were found however between institutions and to a lesser extent geographically, with many of the trends reported as currently features in some institutions but not in other institutions.

5.2. The major curriculum trends identified by respondents as present today were: multiple choice questions (MCQs) in assessment; a curriculum planning committee; small group teaching; training in clinical skills units; communication skills, attitudes and professionalism, and drug prescribing as learning outcomes.

5.3. Future trends that were not thought by the majority of respondents to feature at present were: the use of games in education; measurement of the educational environment; public consultation in curriculum planning; and patients contributing to the assessment of students.

5.4. Geographical differences were identified in the level of current implementation of some curriculum trends between European and non-European countries:

5.4.1. Marginally more likely today to be trends in EU than non-EU countries were: the harmonisation of learning outcomes across medical schools in the same country; recognised study-abroad periods; peer- tutoring; students developing learning resources; training in clinical skills units; individualised study options; students as members of planning committees; evaluation of teachers; use of portfolios; and the involvement of other professions in assessing students.

5.4.2. Trends more common in non-EU than EU countries were: communication skills as a learning outcome; an increase in the number of medical students; the admittance of students from diverse backgrounds; attention to students' health and well-being; the use of MCQs and the OSCE; and having a medical education unit.

6. *Future Curriculum Trends*

6.1. The desired vision of medical education over the next 3-5 years was associated with the further development of the current trends with what was seen at present as minor trends becoming major trends and what was not seen at present as a trend becoming a minor or major trend. Where a trend has been rated currently as a major trend the rating increased when looking to the future. The two exceptions, not unsurprisingly were the use of MCQs as an assessment tool with more authentic assessment tools such as portfolio assessment becoming more prominent and an increase in the number of students being admitted to study medicine. In some areas the number is already being reduced.

6.2. Major future trends identified included: curriculum based on easily accessible learning outcomes communicated to students and teachers; including attitudes and professionalism; communication skills; critical thinking skills; lifelong learning skills, the ability to evaluate research evidence and to collaborate and co-operate effectively in teams; recognised study abroad periods; attention to student health and well-being; the admittance of students from diverse backgrounds; a curriculum planning committee; the systematic evaluation of

the curriculum; small group teaching; training in clinical skills units; authentic assessment closely matched to learning outcomes, including the use of the OSCE; training in ambulatory care settings; and the evaluation of teaching performance.

6.3. Geographical differences between European and non-European countries were identified with regard to future curriculum trends:

6.3.1. Future trends considered to a greater extent in EU than non-EU countries were: students having recognised study abroad periods; curriculum with a planned continuum of learning between undergraduate and postgraduate training; and students being full members of curriculum planning committees.

6.3.2. Future trends featuring to a greater extent in non-EU than EU countries were: health promotion, complementary and alternative medicine as learning outcomes; the admittance of students from diverse backgrounds; attention to students' health and well-being; opportunities for students to develop team-work skills; training in ambulatory care settings; horizontal and vertical integration of the curriculum; use of the OSCE and having a medical education unit and staff with specific training and expertise in education.

7. *Expected Change in Curriculum Trends*

7.1. Trends where the greatest change was identified (an increase between current and future trends) included: preparing students to report and analyse medical errors; learning outcomes harmonised between medical schools in Europe; curriculum developing students ability to assess their own competence; teaching and learning programmes being adapted to the individual learning needs of students; students being co-authors and collaborating in the development of learning resources; the use of virtual patients; consultation with recent graduates on curriculum planning; staff promotion on the basis of teaching performance; a planned continuum of learning between undergraduate and postgraduate studies; and measurement of the education environment.

7.2. Trends where the least desired change was reported included: prescribing drugs, attitudes and professionalism and research skills as part of the curriculum; the admittance of students with a first degree in another area, and with diverse backgrounds; recognised study abroad periods; high levels of IT literacy; curriculum planning committees; training in clinical skills units and ambulatory care settings; students working in small groups; other healthcare professionals teaching medical students; students as full members of curriculum planning committees; use of the OSCE ; and the opportunity of individual in-depth study.

7.3. Only two from the list of 82 trends received a negative score in relation to desired change: an increased number of students being admitted to medical school, and the use of MCQs in assessment.

7.4. Geographical differences were identified in the degree of expected change between EU and non-EU countries. A low rating for change did not usually indicate that the item was not seen as a feature in the future but rather that the room for change was limited given a high current rating.

7.4.1. A greater desired change in EU than non-EU countries was reported in respect of the harmonisation of learning outcomes across medical schools in Europe; admittance of students from diverse backgrounds; and communication skills as a learning outcome.

7.4.2. A greater desired change in non-EU than EU countries was reported in respect of: other professions and patients contributing to the assessment of students; opportunities for recognised study abroad periods; portfolios as an assessment tool; less reliance on lectures; progress tests; the vertical; integration of the curriculum; students as full members of curriculum planning committees; and students as co-authors and collaborating in the development of learning resources.

8. *Obstacles to Curriculum Change*

8.1. This survey highlights the range of obstacles to the development of curriculum change experienced within medical schools. In the main part of the survey:

8.1.1. In relation to factors relating to the status quo survey respondents highlighted firstly a culture of conservatism, and secondly a satisfaction with the current approach in medical schools. Both of these factors were found to be more of an issue in non-EU than EU countries.

8.1.2. In relation to factors relating to the proposed change survey respondents highlighted firstly that they felt that teachers were not convinced that curriculum change would bring an improvement, and secondly that teachers were not trained to implement the new approach. This second factor was found to be more of an issue in EU than non-EU countries.

8.1.3. In relation to factors relating to the cost of the proposed changed survey respondents highlighted firstly the increased workload of implementing the change, secondly, the increased workload of planning the change, and thirdly that there were fewer resources to support educational initiatives in times of financial constraint. This final factor was found to be more of a concern in EU than non-EU countries.

8.1.4. In relation to factors associated with the process of change, survey respondents highlighted firstly that teachers' work is not incentivised or rewarded and secondly teachers' conflicting interests of research and clinical care. This later issue was found to be more of an issue in EU than non EU countries.

8.2. The main obstacles to curriculum change as highlighted in the open response survey questions were:

- A lack of resources (money, staff, time)
- Teachers' conflict of interest with research/clinical care
- Infrastructure/logistics
- The lack of incentives and rewards for teaching
- Politics/Policy.

1. Background to Report

Curricula are being re-examined in medical schools across Europe in response to advances in medicine, changes in healthcare delivery, evolving public expectations including patient safety, new approaches to education and developments in educational technology. The expected learning outcomes, the curriculum strategies, the methods of teaching and learning and the assessment procedures are all under review.

Some 100 years after the Flexner Report on medical education in Europe, the time is right to review the position at the beginning of the 21st Century and to examine how schools are addressing emerging themes such as: the move to outcome-based education; professionalism and medical ethics; the application of the new learning technologies; customisation of teaching and learning to meet the needs of a more diverse group of students; assessment of learning outcomes not previously assessed; the continuum of education from undergraduate through postgraduate to continuing professional development; and recognition of the international dimensions of medical education, exemplified in a transnational approach. Many of these trends are supported by national and European directives including the Bologna Process. Concern has been raised about possible tensions between the curricular trends and the published directives, in particular those relating to the two-cycle model. There is a need to demonstrate synergy between the directives and trends identified in medical education.

As part of the EU supported MEDINE2 Initiative (www.medine2.com), the current position and aspirations relating to the current trends in curriculum planning in European medical schools and schools elsewhere in the world have been ascertained.

The aim of the research undertaken by the MEDINE2 Work Package 5 Task Force was to identify curriculum trends in medical education and to gather evidence on the current and future positions with regard to these trends from the perspective of medical educators in Europe and beyond.

During the survey, a number of the respondents expressed concern about the significant obstacles to the implementation of curriculum change within their institutions. A follow-up survey was conducted to explore these concerns in more detail.

2. Methods

2.1 Identifying curriculum trends

To produce a list of potential curriculum trends in medical education, the research began with an exploratory review of the academic and policy-related literature, and an analysis of papers presented at meetings on medical education. A range of search engines were used, including Google Scholar to identify the literature published after 2000 that contained the following keywords: 'trends', 'curriculum', medical', 'education', and 'undergraduate'. In total 7100 papers were identified from a variety of peer-reviewed journals including: Medical Teacher, Academic Medicine, Medical Education, Teaching and Learning in Medicine and Advances in Health Sciences Education. Policy-related documents concerning medical education reviewed included *Tomorrow's* Doctors (2009); *The Future of Medical Education in Canada* (2010); *The Scottish Doctor* (2009); and *Educating Physicians: Calls for Reform of Medical Education* (2010). In the search for potential trends a standard text, *A Practical Guide for Medical Teachers* (2009) was also reviewed.

This literature review led to the development of a preliminary list of curriculum trends. This list was reviewed by MEDINE2 Work Package 5 Taskforce members and 130 participants in a symposium at the 2010 AMEE annual conference in Glasgow. These and discussions with experts in the field led to a series of revisions before a final set of 82 curriculum trends was developed. The trends were then classified into three areas in terms of developments relating to:

1. 'The Product' or the doctor graduated (20 statements)
2. 'The Student' entering medical studies (10 statements)
3. 'The Education Process' including teaching and learning methods and strategies, and student assessment (52 statements).

A full list of the 82 curriculum trends can be found in Appendix 1.

2.2 Conducting the survey of curriculum trends

A survey questionnaire was designed to measure the perceptions of respondents with regard to firstly, the current position of the 82 curriculum trends in their institution; and secondly, their vision for each trend more generally over the next 3-5 years. Survey respondents were asked to consider their vision of what *should* happen in medical education rather than their prediction as to what would happen in reality.

Respondents were asked to classify each of the 82 items on the list as 'not a feature', a 'minor feature' or a 'major feature' for both the current position in their institution and their future vision of the trend more generally. A 'don't know' alternative was also provided for each statement. Definitions were given for 35 of the statements where it was felt this was necessary to facilitate understanding. A copy of the questionnaire can be found in Appendix 2.

The aim of the survey was to gather data from people directly connected to medical education. A purposive sample was selected of: Deans of medical schools in Europe; MEDINE2 representatives of medical schools in Europe, AMEE conference participants; AMEE individual and AMEE institutional members; and members of student medical associations (International Federation of Medical

Student's Associations; European Medical Student's Association; and Portuguese Medical Student's Association). The questionnaire was translated and made available in four languages: English, French, Spanish and German. The survey was disseminated using Bristol Online Surveys (BOS). Printed versions of the survey were also distributed to encourage responses from those not familiar with online surveys or where completion of the survey in print was preferred to completion on-line.

2.3 Obstacles to change survey

A symposium on the MEDINE2 curriculum trends survey was held at the 2011 AMEE Conference in Vienna. During this session the 200 audience members were asked to write on cards issues that they considered being obstacles to the implementation of curriculum change. The cards were collected and the responses were analysed and discussed at a meeting of 14 members of the MEDINE2 Work Package 5 group. A number of statements outlining obstacles to change were defined. These statements were examined in the context of the curriculum change literature, and twenty-nine proposed obstacles to change were identified.

Obstacles to change were grouped into four areas:

1. Factors in favour of status quo in the institution;
2. Problems relating to the proposed change;
3. Factors associated with the cost of implementing the change; and
4. Factors associated with the process of change.

The areas correspond to the elements of the equation:

$$\text{Change} = \frac{\text{Perceived disadvantage of status quo } x \text{ Vision of proposed change}}{\text{Cost of Implementation x Change Process Difficulty}}$$

The 29 possible obstacles were included in a questionnaire and respondents were asked to assess, from their personal experience, each of the potential obstacles on the scale:

1. Not an obstacle
2. Minor obstacle
3. Significant obstacle
4. Considerable obstacle
5. Major obstacle
6. Don't know.

The survey also included two open response questions in which respondents were asked to report any additional obstacles they had experienced and to qualify their experiences with comments. A copy of this survey questionnaire can be found in Appendix 3.

The survey was conducted online between May and July 2012, and was distributed to respondents who had completed the initial Curriculum Trends survey and to AMEE members and publicised on the AMEE and MEDINE2 website.

2.4 Data Analysis – Curriculum Trends Survey

Scores are used to indicate the strength of a trend. The survey responses were coded as:

0= not a trend;

1= minor trend;

2= major trend.

The data was analysed using SPSS and R. Where there were missing answers, and to ensure that all available information is used in the analysis, an expected value imputation of missing values was conducted using SPSS MVA. This procedure uses the variance-covariance matrix of available information and utilizes an Expectation-Maximization algorithm to impute the expected value for each missing cell as predicted from all the available information

The analysis of the survey questions and implicit trends involved the construction of three regression models were constructed for each survey question: firstly, the current position in relation to the curriculum trends; secondly, the perceived future position; and finally, the difference of these two to denote the expected trend. The model intercept (or average on the graph) provides the average response to the survey question by the reference group). For the trend regression, a positive intercept means a positive trend for the question while a negative denotes a negative trend.

Predictors in the regression model included: gender, age, role in institution, and profession. Since regression models with multi-category predictors require a baseline for comparison, the following categories were selected as the baseline for the initial regression model: Men; Doctors; Heads of Institutions; and Age Group 30 – 49 years. The final model uses a baseline category of these characteristics with all excluded predictor added as the baseline. For example, in a full model the coefficient of Female compares the answers of women to the baseline (men) category. Similarly the coefficient Nurse compares nurses to doctors. But as other occupations (for example all others except for nurses) are excluded from the model, nurses are then being compared to all other occupations as none of the occupations (including doctors) differ from each other, but nurses differ from them. In essence, all excluded variables increased the pool of the reference category but this was only done when the categories added to the reference group did not differ significantly from the reference group

The figures present the regression results both visually and numerically (see Appendix 7 for visual representation of results). The centreline denotes 0 visually highlighting if people in certain categories are lower or higher in their response or trend. The dots denote the estimates and the lines next to them highlight the 95% confidence interval of that estimate. Estimates are presented numerically as well with corresponding p values. The regression coefficients presented are unstandardised.

With regard to the comparison of answers from European and non-European countries, descriptive statistics are calculated on the raw dataset with missing cases excluded from the calculations. Significance of the differences is assessed with both a Welch corrected two sample t-test and a Mann-Whitney test. It is a simpler method compared to the multi-variance analysis used for the previous approach and it must be kept in mind that this approach does not take into account any other factor than European or non-European. The Welch correction on the two-sample t test assures that the hypothesis test is accurate even when the two samples have different variances on the variable of interest. Given that the raw survey responses are measured on a three point scale, central limit theorem cannot be relied upon and the Mann-Whitney test might be more reasonable in these instances because it is not sensitive to the distributional assumptions like the t-test. This is less of an issue with the 5-point difference variables. For this reason the Mann-Whitney test is also included. The downside of the Mann-Whitney test is that it is less powerful and therefore requires a larger sample than the t-test to find the difference with significance. The descriptive statistics are presented for the raw data. Unlike the descriptive statistics, the t- and Mann-Whitney tests were conducted on the imputed sample.

The r2 presented with the models show the per cent of variance explained in the survey questions (or trend) by the categories assessed in the model. The higher it is the more the differences are explained by the investigated factors. If the value is low, then some non-investigated factor (e.g. qualifications in medical education) influences the answers more than the investigated factors. In the field of social sciences the 0.25 r2 value is considered a big influence and publications appear even with 0.1.

A note on the possible limitations of the statistical approach adopted is given in Appendix 4.

2.5 Data Analysis – Obstacles to Curriculum Change

The data in this survey was analysed using SPSS. The descriptive statistical analysis was based on the raw data with missing and 'Don't Know' responses excluded. The analysis explored the existence of differences in response based on age group, gender, region and title, and the statistical significance of results were identified using Mann-Whitney tests. Due to the small number of respondents within some of the subcategories, the data was grouped in the following way in order to perform the analysis: EU/non-EU; Aged 49 and under/ Aged 50 years and over; Professor/ non-Professor. The UK was also used as a comparative category in the analysis.

3. Results

3.1 Curriculum Trends

3.1.1 Profile of Respondents to Curriculum Trends Survey

3.1.1.1 Geographic distribution

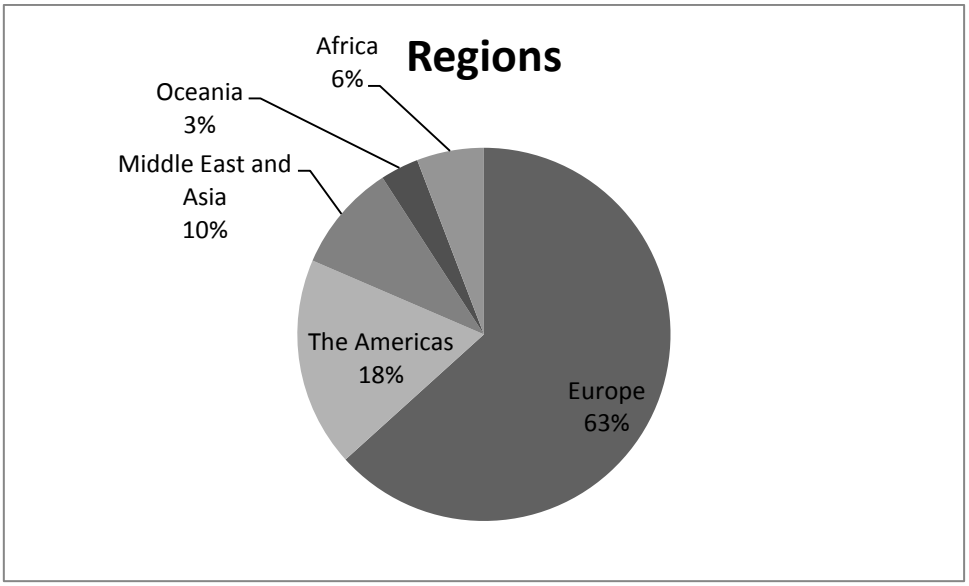
In total 849 responses were received from 73 different countries. 517 were from European countries and 325 from non-European countries (missing information =7). Table1 summarises the number of responses received per country.

Table1: Number of survey responses received by country

Country	Number of completed surveys
United Kingdom	90
Germany	88
Spain	68
Unites States of America	53
Canada	40
Egypt	39
The Netherlands	34
Estonia	32
Australia	25
Poland, Thailand, Turkey	19
Mexico	18
Norway	17
Belgium	15
Romania	14
Brasil	13
Denmark, Greece, Sweden	12
Ireland, Portugal	11
Argentina, Saudi Arabia	10
South Africa	9
Austria, Finland	8
Iran, Italy, Switzerland	7
MISSING INFO	7
Pakistan, Russia, United Arab Emirates, France	6
Lithuania, Chile	5
Czech Republic, Hungary, India, Indonesia, South Korea	4
Taiwan, Albania, Malaysia, Malta, New Zealand, Slovenia, Ukraine, Columbia, Peru	3
Bulgaria, Dominican Republic, Georgia, Israel, Japan, Kazakhstan, Latvia, Serbia, Slovakia, Sri Lanka, Venezuela,	2
Brunei, Croatia, El Salvador, Hong Kong (China), Jamaica, Jordan, FYR Macedonia, Palestine Territories, Philippines, Sudan, Guatemala, Puerto Rico	1

Figure 1 demonstrates the regional distribution of respondents.

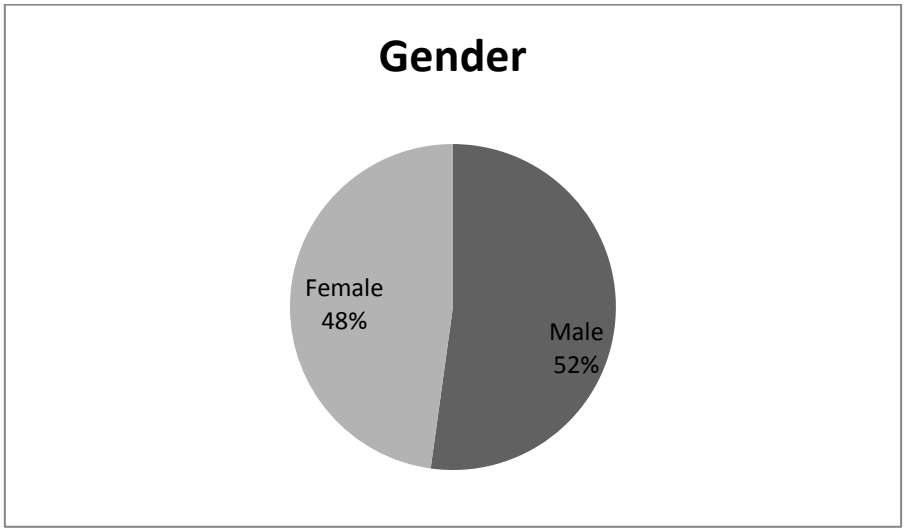
Figure 1: Regional distribution of survey respondents.



3.1.1.2 Gender

Figure 2 summarises the gender of respondents. Fifty-two per cent of the respondents were male and 48% female.

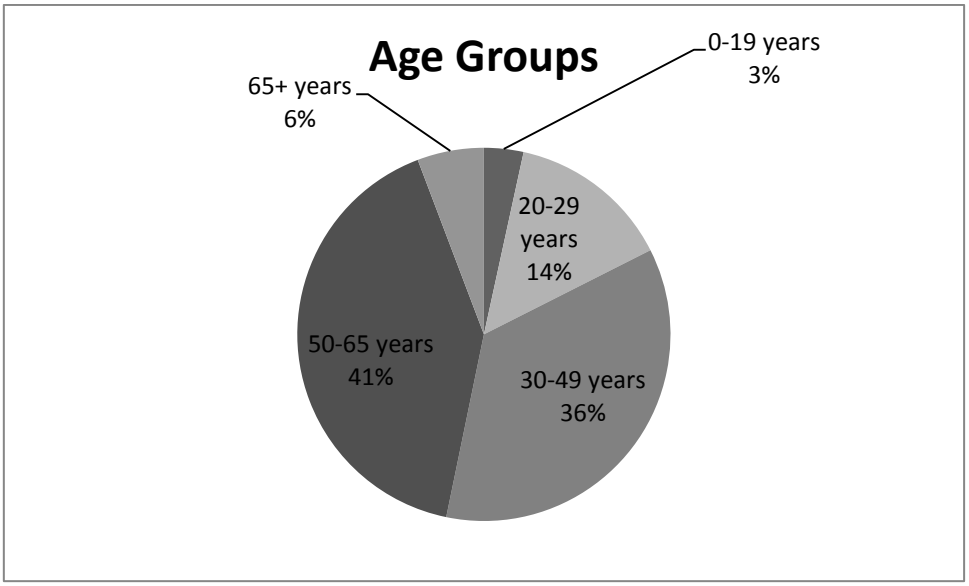
Figure 2: Gender of Curriculum Trends Survey Respondents



3.1.1.3 Age

All age groups were represented, as demonstrated in Figure 3. Fifty-three per cent of respondents were aged 49 years or under, and 47% aged 50 years or over.

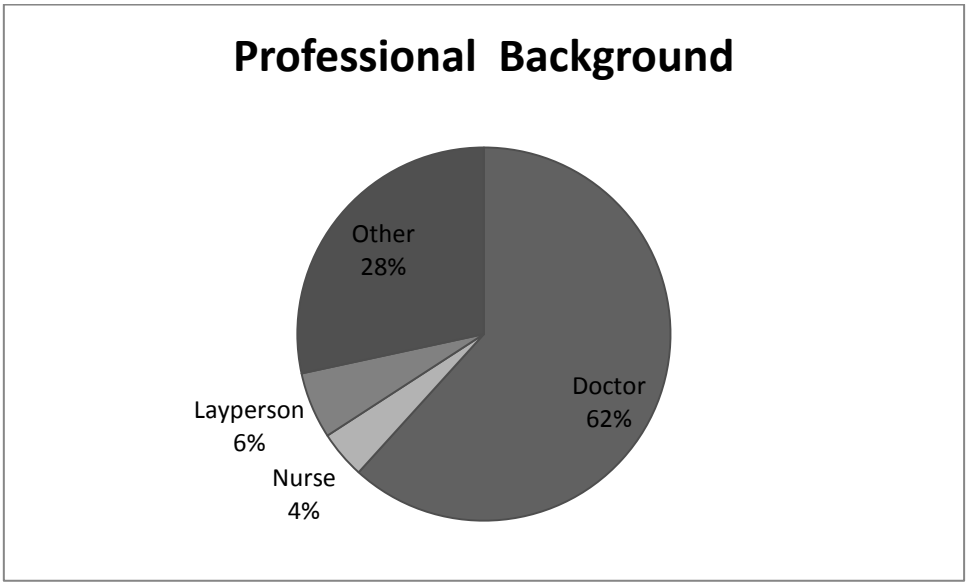
Figure 3: Age of Curriculum Trends Survey Respondents



3.1.1.4 Professional Background

Respondents included doctors, nurses, a range of others with a commitment to medical education, and lay persons. Sixty-two per cent of respondents reported their professional background as being a medical doctor, 4% a nurse and 34% 'other' (See Figure 4).

Figure 4: Professional Background of Curriculum Trends Survey Respondents



3.1.1.5 Role in Institution

Respondents had a range of roles in their institutions, including senior and junior positions and students. These are summarised in Table 2.

Table 2: Role of Curriculum Trends Survey Respondents within their Institution

Role in Organization	Frequency (%)
Dean, Vice Dean, Head of Undergraduate Studies, Head of Curriculum	194 (23%)
Head of Medical Education Unit	116 (14%)
Head of International Relations/ Head of EU Project	20 (2%)
Teacher	221 (26%)
Student	149 (18%)
Administrator	21 (2%)
Other	128 (15%)

3.1.2 Curriculum Trends: Current Position

This section reviews current curriculum trends in relation to the three categories: 'The Product'; 'The Student'; and 'The Education Process'. Comparisons are also be made between European and Non-European countries.

The higher the mean score the stronger the trend, and vice versa. Mean scores of between 1.5-2 were taken to indicate a major trend; 0.5-1.49 a minor trend; and 0-0.49 not a significant trend.

Almost all of the 82 trends initially identified were reported by some respondents as a minor or a major trend in their school. Seven were identified by respondents as major current trends in their institutions, 71 as minor trends and four as not significant trends. Significant differences were found however between institutions and to a lesser extent geographically, with many of the trends reported as currently features in some institutions but not in other institutions.

3.1.2.1 Major Trends

Table 3 summarises the major current curriculum trends of the seven major trends, four of the major trends related to 'The Process', and three to 'The Product' – the doctor. The highest scoring current curriculum trends for 'The process' were the use of MCQs in student assessment (Mean score 1.74, 78.2% reported it to be a major trend); and a curriculum planning committee (mean score 1.73, 77% of respondents reported it to be a major trend). The highest scoring curriculum trends for 'The product' were: the inclusion of communication skills as a learning outcome (mean score 1.53, 61.8% of respondents reported it to be a major trend); and the importance of attitudes and professionalism being emphasised in the curriculum (mean score 1.52, 59.6% of respondents reported to be a major trend). While the majority of respondents identified these trends as major in the context of their own school, other respondents noted them as minor or not a trend.

Table 3: Current Curriculum Trends –Major Trends (Global Perspective) (Mean 1.5 to 2.0)

Curriculum Trend	Category	Current Position			
		Not	Minor	Major	Mean
19.c. Multiple Choice Questions (MCQs) are used to assess students. n=705	Process	30 (4.3%)	124 (17.6%)	551 (78.2%)	1.74
21.a. There is a committee responsible for curriculum planning. n=669	Process	27 (4.0%)	127 (19.0%)	515 (77.0%)	1.73
16.j. Students work in small groups. n=748	Process	39 (5.2%)	253 (33.8)	456 (61.0%)	1.56
17.b. Training is provided in clinical skills units. n=733	Process	48 (6.5%)	234 (31.9%)	451 (61.5%)	1.55
12.f. Learning outcomes include communication skills. n=820	Product	70 (8.5%)	243 (29.6%)	507 (61.8%)	1.53
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills. n=819	Product	64 (7.8%)	267 (32.6%)	488 (59.6%)	1.52
13.b. The curriculum equips students with the ability to prescribe drugs. n=743	Product	46 (6.2%)	276 (37.1%)	421 (56.7%)	1.50

3.1.2.2 Minor Trends

Tables 4, 5 and 6 summarise the minor current curriculum trends. Seventeen of the minor trends related to 'The Product', 10 to 'The Student' and 44 to 'The Process'. Trends relating to 'The Product' included: a curriculum based on well-defined and easily accessible learning outcomes that are communicated to staff and students; and stated learning outcomes being used in all decisions about the curriculum. Trends relating to 'The Student' included: students having opportunities for recognised study abroad periods; and an increasing number of students being admitted to medical school. Trends relating to 'The Process' included: the training of students in ambulatory care settings; and the use of the OSCE in student assessment.

There was variation between respondents ratings with many trends in this category being considered a major trend of about half of the respondents.

Table 4: Current Curriculum Trends – 'The Product' - Minor Trends (Global Perspective Mean 0.5 to 1.49)

Curriculum Trend	Category	Current Position			
		Not	Minor	Major	Mean
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers n=816	Product	65 (8.0%)	305 (37.4%)	446 (54.7%)	1.47
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes. n=805	Product	76 (9.4%)	332 (41.2%)	397 (49.3%)	1.40
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed. n=809	Product	90 (11.1%)	357 (44.1%)	362 (44.7%)	1.34
12.h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies. n=810	Product	81 (10.0%)	382 (47.2%)	347 (42.8%)	1.33
13.d. The curriculum promotes health promotion as an important learning outcome. n=747	Product	64 (8.6%)	376 (50.3%)	307 (41.1%)	1.33
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning. n=763	Product	101 (13.2%)	318 (41.7%)	344 (45.1%)	1.32
12.j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed. n=807	Product	101 (12.5%)	384 (47.6%)	322 (39.9%)	1.27
12.i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects. n=823	Product	102 (12.4%)	401 (48.7%)	320 (38.9%)	1.26
13.c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams. n=754	Product	105 (13.9%)	360 (47.7%)	289 (38.3%)	1.24
13.i. The curriculum develops students' ability to assess their own competence. n=749	Product	154 (20.6%)	397 (53.0%)	198 (26.4%)	1.06
13.e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics. n=737	Product	138 (18.7%)	424 (57.5%)	175 (23.7%)	1.05
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors. n=740	Product	159 (21.5%)	421 (56.9%)	160 (21.6%)	1.00
12.c. Learning outcomes are harmonized across medical schools in the same country. n=755	Product	238 (31.5%)	293 (38.8%)	224 (29.7%)	0.98
13.h. The curriculum prepares students with the skills expected of global citizens. n=719	Product	245 (34.1%)	331 (46.0%)	143 (19.9%)	0.86
13.g. The graduate of the medical school is equipped with skills in teaching. n=748	Product	275 (36.8%)	397 (53.1%)	76 (10.2%)	0.73
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools. n=539	Product	235 (43.6%)	229 (42.5%)	75 (13.9%)	0.70
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine. n=740	Product	310 (41.9%)	387 (52.3%)	43 5.8%)	0.64

Table 5: Current Curriculum Trends – 'The Student' - Minor Trends (Global Perspective Mean 0.5 to 1.49)

Curriculum Trend	Category	Current Position			
		Not	Minor	Major	Mean
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies. n=737	Student	67 (9.1%)	307 (41.7%)	363 (49.3%)	1.40
14.a. There are an increased number of students admitted to medical schools to study medicine. n=742	Student	144 (19.4%)	179 (24.1%)	419 (55.6%)	1.37
14.b. Students admitted to study medicine are from diverse backgrounds. n=752	Student	79 (10.5%)	332 (44.1%)	341 (45.3%)	1.35
15.a. Attention is paid to student's health and wellbeing. n=740	Student	144 (19.5%)	330 (44.6%)	266 (35.9%)	1.16
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning. n=723	Student	127 (17.6%)	371 (51.3%)	225 (31.1%)	1.14
15.c. Students contribute to the teaching programme as peer tutors. n=725	Student	194 (26.8%)	367 (50.6%)	164 (22.6%)	0.96
14.e. Selection methods are used that assess a range of abilities and not just academic achievement. n=747	Student	319 (42.7%)	225 (30.1%)	203 (27.2%)	0.84
15.d. Students are co-authors and collaborate in the development of learning resources. n=725	Student	288 (39.7%)	354 (48.8%)	83 (11.4%)	0.72
14.c. Students admitted to study medicine have a first degree in another area. n=738	Student	340 (46.1%)	288 (39.0%)	110 (14.9%)	0.69
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress. n=724	Student	346 (47.8%)	320 (44.2%)	58 (8.0%)	0.60

Table 6: Current Curriculum Trends – 'The Process' - Minor Trends (Global Perspective Mean 0.5 to 1.49)

Curriculum Trend	Category	Current Position			
		Not	Minor	Major	Mean
17.a. Students are trained in Ambulatory care settings. n=708	Process	47 (6.6%)	340 (48.0%)	321 (45.3%)	1.39
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment. n=684	Process	102 (14.9%)	224 (32.7%)	358 (52.3%)	1.37
20.a. The curriculum is systematically and objectively evaluated. n=676	Process	97 (14.3%)	240 (35.5%)	339 (50.1%)	1.36
21.g. One or more staff with specific training and expertise in education support the local education initiative. n=635	Process	94 (14.8%)	235 (37.0%)	306 (48.2%)	1.33
19.i. Assessment is closely matched to the stated learning outcomes. n=701	Process	94 (13.4%)	292 (41.7%)	315 (44.9%)	1.32
21.f. A medical education unit or department supports the education initiative in the medical school. n=657	Process	131 (19.9%)	184 (28.0%)	342 (52.1%)	1.32
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase. n=709	Process	107 (15.1%)	274 (38.6%)	328 (46.3%)	1.31
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff. n=689	Process	95 (13.8%)	294 (42.7%)	300 (43.5%)	1.30
16.g. Students use simulators or devices to complement the use of real patients. n=745	Process	71 (9.5%)	395 (53.0%)	279 (37.4%)	1.28
21.b. Students are full members of the curriculum planning committee. n=641	Process	114 (22.5%)	172 (26.8%)	325 (50.7%)	1.28
17.c. Training is provided in the local community. n=715	Process	103 (14.4%)	335 (46.9%)	277 (28.7%)	1.24
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum. n=706	Process	118 (16.7%)	300 (42.5%)	288 (40.8%)	1.24
19.a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor. n=688	Process	108 (15.7%)	304 (44.2%)	276 (40.1%)	1.24
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them. n=735	Process	112 (15.2%)	355 (48.3%)	268 (36.5%)	1.21
17.e. Training is provided through work-based learning such as shadowing a junior doctor. n=700	Process	149 (21.3%)	263 (37.6%)	288 (41.1%)	1.20
22.f. Programmes are in place to assist staff to keep up to date with their teaching expertise. n=650	Process	116 (17.8%)	287 (44.2%)	247 (38.0%)	1.20
18.f. A problem-based approach is adopted with the learning structured around a set of problems. n=722	Process	121 (16.8%)	353 (48.9%)	248 (34.3%)	1.18
21.h. Decisions about the curriculum are based on an examination of the evidence reported in medical education. n=617	Process	127 (20.6%)	257 (41.7%)	233 (37.8%)	1.17
16.h. People are trained as standardised patients and used to complement work with real patients. n=728	Process	178 (24.5%)	264 (36.3%	286 (39.3%)	1.15
16.l. Opportunities are provided specifically to help students develop team work skills. n=730	Process	143 (19.6%)	354 (48.5%)	233 (31.9%)	1.12
16.a. Electronic versions of printed medical books are used. n=718	Process	129 (18.0%)	387 (53.9%)	202 (28.1%)	1.10
19.l. Staff with training and experience in assessment support the assessment programme in the medical school. n=672	Process	181 (26.9%)	247 (36.8%)	244 (36.3%)	1.09
22.b. Other healthcare professionals contribute to the teaching of medical students. n=699	Process	116 (16.6%)	424 (60.7%)	159 (22.7%)	1.06
16.f. Lecture content is available through electronic recording. n=730	Process	184 (25.2%)	322 (44.1%)	224 (30.7%)	1.05
16.b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities. n=742	Process	152 (20.5%)	415 (55.9%)	175 (23.6%)	1.03
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training. n=699	Process	189 (27.0%)	304 (43.5%)	206 (29.5%)	1.02
22.c. Professionalism in teaching is acknowledged and rewarded in the school. n=683	Process	184 (26.9%)	326 (47.7%)	173 (25.3%)	0.98
19.b. Assessment is integrated rather than each subject being assessed independently. n=691	Process	228 (33.0%)	254 (36.8%)	209 (30.2%)	0.97
22.e. All staff members are expected to have had training in teaching. n=673	Process	220 (32.7%)	253 (37.6%)	200 (29.7%)	0.97
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning. n=711	Process	212 (29.8%)	318 (44.7%)	181 (25.5%)	0.96
16.e. Less reliance is placed on the use of lectures. n=721	Process	206 (28.6%)	346 (48.0%)	169 (23.4%)	0.95
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness. n=634	Process	194 (30.6%)	289 (45.6%)	151 (23.8%)	0.93
17.d. Training is provided in a rural setting in addition to an urban setting. n=713	Process	244 (34.2%)	310 (43.5%)	159 (22.3%)	0.88
19.e. Electronic assessment is used. n=680	Process	252 (37.1%)	279 (41.0%)	149 (21.9%)	0.85
22.d. Staff members can be promoted on the basis of their performance as a teacher. n=640	Process	238 (37.2%)	276 (43.1%)	126 (19.7%)	0.83
19.f. Portfolios are used as a tool to assess students' competence. n=675	Process	256 (37.9%0	298 (44.1%)	121 (17.9%)	0.80
19.g. Other professions as well as doctors contribute to the assessment of students. n=699	Process	292 (41.8%)	307 (43.9%)	100 (14.3%)	0.73

16.i. Virtual patients presented electronically are used. n=707	Process	297 (42.0%)	325 (46.0%)	85 (12.0%)	0.70
19.k. A progress test is used. n=649	Process	348 (53.6%)	165 (25.4%)	136 (21.0%)	0.67
21.d. Other health professionals are consulted in planning the curriculum. n=616	Process	311 (50.5%)	229 (37.2%)	76 (12.3%)	0.62
21.e. Recent graduates are consulted in curriculum planning. n=596	Process	319 (53.5%)	206 (34.6%)	71 (11.9%)	0.58
16.c. Some courses are available entirely online. n=725	Process	404 (55.7%)	238 (32.8%)	83 (11.4%)	0.56
19.j. There is an element of peer assessment where students assess each other. n=691	Process	377 (54.6%)	269 (38.9%)	45 (6.5%)	0.52
18.e. Students for part of the course are taught alongside students from other professions. n=720	Process	406 (56.4%)	265 (36.8%)	49 (6.8%)	0.50

3.1.2.3 Not a Trend

Table 7 summarises the curriculum trends that were not considered to be significant trends at present. The use of games, measurement of the education environment, the role of the public in curriculum planning, and of patients in the assessment of students all feature. Again, however, reflecting the variations in responses, some respondents rated these trends as major.

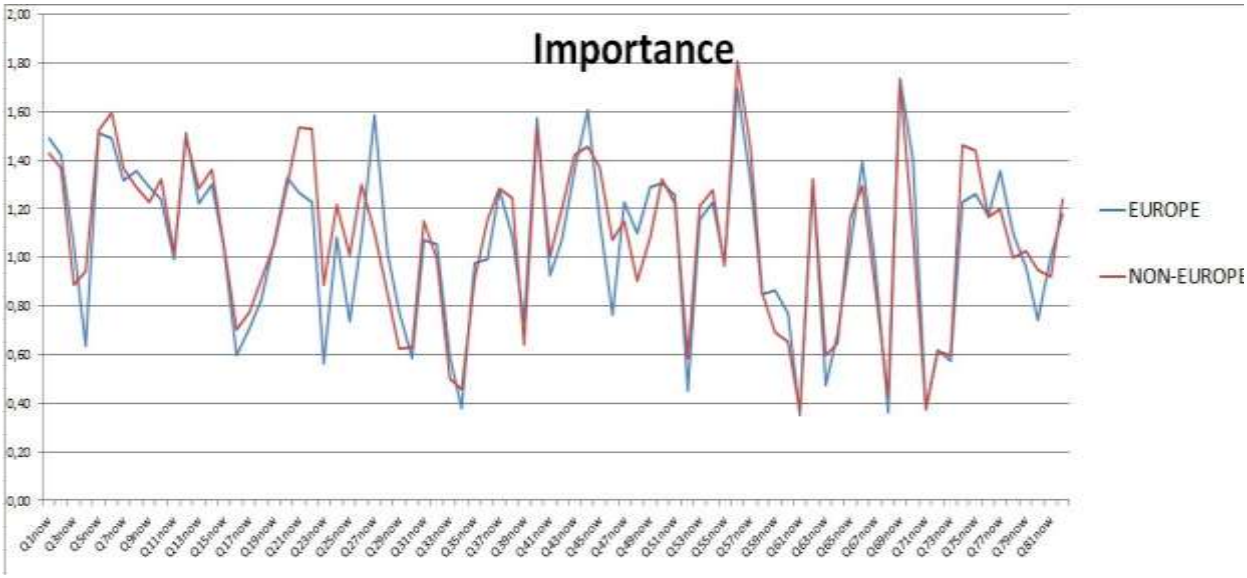
Table 7: Current Curriculum Trends – Global Perspective – Not a Trend (0-0.49)

Curriculum Trend	Category	Current Position			
		Not	Minor	Major	Mean
16.d. Games are used to assist medical students in their learning. n=711	Process	434 (61.0%)	262 (36.8%)	15 (2.1%)	0.41
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure). n=531	Process	382 (71.9%)	92 (17.3%)	57 (10.7%)	0.39
21.c. Members of the public are consulted in curriculum planning. n=605	Process	418 (69.1%)	147 (24.3%)	40 (6.6%)	0.38
19.h. Patients contribute to the assessment or rating of the students' performance. n=680	Process	474 (69.7%)	169 (24.9%)	37 (5.4%)	0.36

3.1.2.4 Geographic Comparison – EU/non-EU

This section compares the results for current curriculum trends between EU and non-EU countries. Only the results found to have statistically significant differences are reported. Figure 5 illustrates the mean rating of the current trends by European and non-European respondents. Whilst some variations exist it can be seen that in general the pattern is the same for European and non-European countries. The mean rates for European respondents was 1.06 ± 0.68 and for non-European respondents 1.08 ± 0.68.

Figure 5: Mean ratings of current trends by European and non-European respondents



EUROPE: 1.06±0.68

NON-EUROPE: 1.08±0.68

Table 8 and 9 summarise the statistically significant differences between responses from EU and non-EU countries relating to 'The Product'.

Table 8: Current Curriculum Trends: 'The product' EU > non-EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
12c. Learning outcomes are harmonized across medical schools in the same country.	EU n=460	127 (27.6%)	186 (40.4%)	147 (32.0%)	1.04	p<0.005
	Non-EU n=295	111 (37.6%)	107 (36.3%)	77 (26.1%)	0.88	

Table 9: Current Curriculum Trends: 'The Product' non-EU > EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
12f. Learning outcomes include communication skills.	EU n=500	49 (9.8%)	156 (31.2%)	295 (59.0%)	1.49	p<0.05
	Non-EU n=320	21 (6.6%)	87 (27.2%)	212 66.3%)	1.60	
12d. Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	EU n=421	198 (47.0%)	178 (42.3%)	45 (10.7%)	0.64	p<0.001
	Non-EU n=118	37 (31.4%)	51 (43.2%)	30 (25.4%)	0.94	
13f. Expected learning outcomes include an understanding of complementary or alternative medicine.	EU n=446	200 (44.8%)	225 (50.4%)	21 (4.7%)	0.60	p<0.05
	Non-EU n=294	110 (37.4%)	162 (55.1%)	22 (7.5%)	0.70	

One trend relating to 'The Product' was found to be more of a trend in EU than non-EU countries: 72.4% of respondents in European Countries reported the harmonisation of learning outcomes across the same country to be a minor or major curriculum trend, versus 62.4 % of respondents in non-EU countries. Three trends relating to 'The Product' were found to be more of a trend in non-EU than EU countries: the inclusion of communication skills as a learning outcome; decisions about the curriculum being based on stated learning outcomes; and the inclusion of complementary or alternative medicine as a learning outcome.

Table 10 summarises the curriculum trends relating to 'The Student' which have a stronger current position in EU than in non-EU countries: recognised study abroad opportunities (61.6% of EU respondents reported this to be a major trend versus 29.2% of non-EU); the contribution of students as peer tutors (26.1% of EU respondents reported this to be a major trend versus 17.0% of non-EU respondents); and the collaboration of students in the development of learning resources (14.1% of EU respondents reported this to be a major trend, versus 7.2% of non-EU respondents. The significant difference in the proportion of EU-respondents seeing mobility as a major current curriculum trend may be due to the influence of Bologna, the European Higher Education Area and the Erasmus student exchange programme.

Table10: Current Curriculum Trends: 'The Student' EU> non EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	EU n=456	15 (3.3%)	160 (35.1%)	281 (61.6%)	1.58	p<0.001
	Non-EU n=281	52 (18.5%)	147 (52.3%)	82 (29.2%)	1.11	
15.c. Students contribute to the teaching programme as peer tutors.	EU n=449	107 (23.8%)	225 (50.1%)	117 (26.1%)	1.02	p<0.001
	Non-EU n=276	87 (31.5%)	142 (51.4%)	47 (17.0%)	0.86	
15.d. Students are co-authors and collaborate in the development of learning resources.	EU n=447	163 (36.5%)	221 (49.4%)	63 (14.1%)	0.78	p<0.001
	Non-EU n=278	125 (45.0%)	133 (47.8%)	220 (7.2%)	0.62	

Table 11 summarises the curriculum trends relating to 'The Student' which have a stronger current position in non-EU than EU countries. The admittance of greater numbers of medical students; the admittance of students from diverse backgrounds; an expectation of high levels of IT literacy; attention to student's health and well-being; the admittance of students to study medicine who have a first degree in another areas and the assessment of a range of abilities in the selection of medical students were all reported as being more major trends in non-EU than EU countries.

Table 11: Current Curriculum Trends: 'The Student' non-EU>EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
14.a. There are an increased number of students admitted to medical schools to study medicine.	EU n=449	101 (22.5%)	128 (28.5%)	220 (49.0%)	1.27	p<0.001
	Non-EU n=293	43 (14.7%)	51 (17.4%)	199 (67.9%)	1.53	
14.b. Students admitted to study medicine are from diverse backgrounds.	EU n=452	63 (13.9%)	222 (49.1%)	167 (36.9%)	1.23	p<0.001
	Non-EU n=300	16 (5.3%)	110 (36.7%)	174 (58.0%)	1.53	
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.	EU n=436	93 (21.3%)	214 (49.1%)	129 (29.6%)	1.08	p<0.005
	Non-EU n=287	34 (11.8%)	157 (54.7%)	96 (33.4%)	1.22	
15.a. Attention is paid to student's health and wellbeing.	EU n=455	109 (24.0%)	201 (44.2%)	145 (31.9%)	1.08	p<0.001
	Non-EU n=285	35 (12.3%)	129 (45.3%)	121 (42.5%)	1.30	
14.c. Students admitted to study medicine have a first degree in another area.	EU n=451	223 (49.4%)	202 (44.8%)	26 (5.8%)	0.56	p<0.001
	Non-EU n=287	117 (40.8%)	86 (30.0%)	84 (29.3%)	0.89	
14.e. Selection methods are used that assess a range of abilities and not just academic achievement.	EU n=452	218 (48.2%)	135 (29.9%)	99 (21.9%)	0.74	p<0.001
	Non-EU n=295	101 (34.2%)	90 (30.5%)	104 (35.3%)	1.01	

Table 12 summarises the curriculum trends relating to 'The Process' which have a stronger current position in EU than non-EU countries.

Table 12: Current Curriculum Trends: 'The Process' EU>non-EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
17.b. Training is provided in clinical skills units.	EU n=455	20 (4.4%)	139 (30.5%)	296 (65.1%)	1.61	p<0.001
	Non-EU n=278	28 (10.1%)	95 (34.2%)	155 (55.8%)	1.46	
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.	EU n=457	60 (13.3%)	204 (44.6%)	193 (42.2%)	1.29	p<0.001
	Non-EU n=278	52 (18.7%)	151 (54.3%)	75 (27.0%)	1.08	
21.b. Students are full members of the curriculum planning committee.	EU n=388	57 (14.7%)	119 (30.7%)	212 (54.6%)	1.40	p0.001
	Non-EU n=253	87 (34.4%)	53 (20.9%)	113 (44.7%)	1.10	
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff.	EU n=426	44 (10.3%)	186 (43.7%)	196 (46.0%)	1.36	p<0.005
	Non-EU n=263	51 (19.4%)	108 (41.1%)	104 (39.5%)	1.20	
19.f. Portfolios are used as a tool to assess students' competence.	EU n=420	150 (35.7%)	177 (42.1%)	93 (22.1%)	0.86	p<0.001
	Non-EU n=255	106 (41.6%)	121 (47.5%)	28 (11.0%)	0.69	
19.g. Other professions as well as doctors contribute to the assessment of students.	EU n=437	172 (39.4%)	194 (44.4%)	71 (16.2%)	1.18	p<0.05
	Non-EU n=262	120 (45.8%)	113 (43.1%)	29 (11.1%)	0.65	

The provision of training in clinical skills units; opportunities for in-depth study in areas of interest, student membership of curriculum planning committees, the evaluation of staff teaching performance, the use of portfolios in assessment and the involvement of other professions in the assessment of doctors were all reported to be more of a major trend in EU than non-EU countries. This suggests a greater focus on trends relating to the structure, content and process of curriculum in EU than non-EU countries.

Table 13 summarises the curriculum trends relating to 'The Process' which have a stronger current position in non-EU than EU countries.

Table 13: Current Curriculum Trends: 'The Process' non-EU > EU

Curriculum Trend	Region	Current Position				
		Not	Minor	Major	Mean	Sig.
16.h. People are trained as standardised patients and used to complement work with real patients.	EU n=444	120 (27.0%)	166 (37.4%)	158 (35.6%)	1.09	p<0.05
	Non-EU n=284	58 (20.4%)	98 (34.5%)	128 (45.1%)	1.25	
16.l. Opportunities are provided specifically to help students develop team work skills.	EU n=448	107 (23.9%)	201 (44.8%)	140 (31.3%)	1.07	p<0.05
	Non-EU n=282	36 (12.8%)	153 (54.3%)	93 (33.0%)	1.20	
17.c. Training is provided in the local community.	EU n=439	89 (20.3%)	190 (43.3%)	160 (36.4%)	1.16	p<0.001
	Non-EU n=276	14 (5.1%)	145 (52.5%)	117 (42.4%)	1.37	
19.c. Multiple Choice Questions (MCQs) are used to assess students.	EU n=435	23 (5.3%)	86 (19.8%)	326 (74.9%)	1.70	p<0.001
	Non-EU n=270	7 (2.6%)	38 (14.1%)	225 (83.3%)	1.81	
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.	EU n=416	71 (17.1%)	140 (33.7%)	205 (49.3%)	1.70	p<0.05
	Non-EU n=268	31 (11.6%)	84 (31.3%)	153 (57.1%)	1.46	
21.f. A medical education unit or department supports the education initiative in the medical school.	EU n=400	100 (25.0%)	108 (27.0%)	192 (48.0%)	1.23	p<0.001
	Non-EU N=257	31 (12.1%)	76 (29.6%)	150 (58.4%)	1.46	
21.g. One or more staff with specific training and expertise in education support the local education initiative.	EU n=384	71 (18.5%)	141 (36.7%)	172 (44.8%)	1.26	p0.001
	Non-EU n=251	23 (9.2%)	94 (37.5%)	134 (53.4%)	1.44	
17.d. Training is provided in a rural setting in addition to an urban setting.	EU n=438	177 (40.4%)	188 (42.9%)	73 (16.7%)	0.76	p<0.001
	Non-EU n=275	67 (24.4%)	122 (44.4%)	86 (31.3%)	1.07	
18.e. Students for part of the course are taught alongside students from other professions.	EU n=448	272 (60.5%)	149 (33.3%)	27 (6.0%)	0.45	p<0.005
	Non-EU n=272	134 (49.3%)	116 (42.6%)	22 (8.1%)	0.59	
19.j. There is an element of peer assessment where students assess each other.	EU n=426	246 (57.7%)	159 (37.3%)	21 (4.9%)	0.47	p<0.05
	Non-EU n=265	139 (49.4%)	110 (41.5%)	24 (9.1%)	0.60	
22.d. Staff members can be promoted on the basis of their performance as a teacher.	EU n=387	159 (41.1%)	168 (43.4%)	60 (15.5%)	0.74	p<0.005
	Non-EU n=253	79 (31.2%)	108 (42.7%)	66 (26.1%)	0.95	

The use of people as standardised patients, opportunities for students to develop team-work skills, training in the local community, the use of MCQs and the OSCE in student assessment; the existence of a medical education unit; staff trained in education support, training in rural and urban settings; the teaching of medical students alongside other professions; the use of peer assessment and promotion of staff based on teaching performance were all reported to be more trends in non-EU than EU countries.

3.1.2.5 Effect of other variables – gender, age, professional background, role in institution.

This section explores the influence of other varies such as age, gender, professional background and role in institution on the responses. As noted in the discussion of methods in Section 3.4, the following categories were used as the baseline for the initial regression model: Men, Doctors, Heads of Institutions, and Age Group 30-49. Therefore the following tables illustrate those trends where there is a significant variation from the baseline or reference group.

Table 14 summarises differences in curriculum trends by gender.

Table 14: Current Curriculum Trends – variations by gender

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
17.b. Training is provided in clinical skills units.	Process	Female	1.65	0.15	p< 0.001
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Female	0.41	0.09	p<0.05
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	Female	0.59	0.11	p<0.01

Women were marginally more likely than their male counterparts to report that training is provided in clinical skills units, patients contribute to student assessment and that the education environment is measured.

Table 15 summarises the differences in curriculum trends by age group. Respondents aged under 20 were more likely than those on the 30-49 age group to report that: students work in small groups, training is provided in clinical skills units, the curriculum stresses the importance of attitudes and professionalism, and that patients contribute to the assessment of student performance. Respondents aged 20-29 were less likely than those in the 30-49 years age group to report that: there is a committee for curriculum planning, that the curriculum equips students with the ability to prescribe drugs and that games are used to assist medical students with learning. Respondents aged 50-65 were more likely than those in the 30-49 aged group to report that the curriculum emphasises the importance of attitudes and professionalism, and that the curriculum has well defined and accessible learning outcomes, but less likely to report that the education environment of the medical school is measured. Similarly, those in the 65+ age group were also less likely to report that the education environment of the medical school is measured than their 30-49 years old counterparts.

Table 15: Current curriculum trends – variations by age group.

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
16.j. Students work in small groups.	Process	<20	1.97	0.4	p<0.005
17.b. Training is provided in clinical skills units.	Process	<20	1.65	0.37	p<0.005
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	<20	1.65	0.44	p<0.005
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	<20	0.41	0.41	p<0.001
21.a. There is a committee responsible for curriculum planning.	Process	20-29	1.88	-0.16	p<0.005
13.b. The curriculum equips students with the ability to prescribe drugs.	Product	20-29	1.7	-0.19	p<0.005
16.d. Games are used to assist medical students in their learning.	Process	20-29	0.51	-0.24	p<0.001
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	50-65	1.65	0.12	p<0.01
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	50-65	1.7	0.15	p<0.005
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	50-65	0.59	-0.15	p<0.001
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	65+	0.59	-0.27	p<0.005

Table 16 summarises the differences in curriculum trends by professional background.

Table 16: Current curriculum trends – variations by professional background

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Nurse	1.65	0.25	p<0.05
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Nurse	1.7	0.29	p<0.01
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Nurse	0.41	0.29	p<0.005
13.b. The curriculum equips students with the ability to prescribe drugs.	Product	Other Occupation	1.7	-0.12	p<0.05

Respondents with a professional background in nursing were more likely than their doctor counterparts to report that: the curriculum emphasised the importance of attitudes and professionalism, that the curriculum has well-defined and easily accessible learning outcomes and that patients contribute to the assessment of student performance. Respondents with professional backgrounds in 'other occupations' were less likely than those who were doctors to report that the curriculum equips students with the ability to prescribe drugs.

Table 17 summarises the differences in curriculum trends by the respondent's role in their institution. Respondents who were Heads of Medical Education Units were less likely than Heads of Institutions to report that training is provided in clinical skills units, that learning outcomes are well-defined and easily accessible, or that the public are consulted in curriculum planning. Respondents with the role of teacher were also less likely than Heads of Institutions to report that: students work in small groups, learning outcomes include communication skills, the curriculum equips students

with the ability to prescribe drugs; the curriculum has well-defined and easily accessible learning outcomes, or that the public are consulted in curriculum planning, but more likely than Heads to report that patients contribute to student assessment. Students were less likely than the Heads of Institutions to report that: students work in small groups; training is provided in clinical skills units; learning outcomes include communication skills; the curriculum emphasises the importance of attitudes and professionalism or that the curriculum has well-defined or easily accessible learning outcomes. Respondents in an administrative role were more likely than Heads of Institutions to report that students contribute to the assessment of students. Respondents in an 'Other' role were less likely than Heads of institutions to report that: there was a curriculum planning committee; students work in small groups; learning outcomes include communication skills; the curriculum emphasises the importance of attitudes and professionalism' learning outcomes are well-defined and easily accessible, or that the public are consulted n curriculum planning; but more likely to report that patients contribute to the assessment of students.

Table 17: Current curriculum trends by role in Institution

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
17.b. Training is provided in clinical skills units.	Process	Med-Ed Unit Head	1.65	-0.14	p<0.05
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Med-Ed Unit Head	1.7	-0.17	p<0.05
21.c. Members of the public are consulted in curriculum planning.	Process	Med-Ed Unit Head	0.65	-0.2	p0.001
16.j. Students work in small groups.	Process	Teacher	1.97	-0.16	p0.001
12.f. Learning outcomes include communication skills.	Product	Teacher	1.92	-0.12	p<0.05
13.b. The curriculum equips students with the ability to prescribe drugs.	Product	Teacher	1.7	-0.11	p<0.05
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Teacher	1.7	-0.12	p<0.05
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Teacher	0.41	0.09	p<0.05
21.c. Members of the public are consulted in curriculum planning.	Process	Teacher	0.65	-0.16	p<0.005
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Admin	0.41	0.18	0.14??
21.a. There is a committee responsible for curriculum planning.	Process	Other role	1.88	-0.13	p<0.01
16.j. Students work in small groups.	Process	Other role	1.97	-0.26	p<0.001
12.f. Learning outcomes include communication skills.	Product	Other role	1.92	-0.17	p<0.05
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Other role	1.65	-0.13	p<0.05
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Other role	1.7	-0.19	p<0.01
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Other role	0.41	0.12	p<0.05
21.c. Members of the public are consulted in curriculum planning.	Process	Other role	0.65	-0.19	p<0.005
16.j. Students work in small groups.	Process	Student	1.97	-0.26	p<0.001
17.b. Training is provided in clinical skills units.	Process	Student	1.65	-0.13	p<0.05
12.f. Learning outcomes include communication skills.	Product	Student	1.92	-0.18	p<0.05
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Student	1.65	-0.15	p<0.05
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Student	1.7	-0.39	p<0.001

3.1.3 Curriculum Trends: A Vision for the Future

Respondents were asked to indicate their future vision of the importance of curriculum trends. It is important to note that respondents were asked for their vision of what should happen in medical education rather than a predication of what they thought would happen in reality. Generally speaking, the responses indicated an increasing prevalence in the expected trend, an indicated by the higher mean scores.

3.1.3.1Major Trends

Tables 18, 19 and 20 summarise the future vision of major curriculum trends in terms of the product, the student and the process. The number of major trends identified increased from seven for the current responses to 57 for the future response.

Table 18: Future Curriculum Trends 'The Product' – Major Trends (Mean 1.5-2.0)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers. n=737	Product	12 (1.6%)	73 (9.9%)	652 (88.5%)	1.87
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills. n=739	Product	11 (1.5%)	72 (9.7%)	656 (88.8%)	1.87
12.f. Learning outcomes include communication skills. n=744	Product	13 (1.7%)	73 (9.8%)	658 (88.4%)	1.87
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes. n=723	Product	14 (1.9%)	71 (9.8%)	638 (88.2%)	1.86
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed. n=721	Product	12 (1.7%)	88 (12.2%)	621 (86.1%)	1.84
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning. n=689	Product	19 (2.8%)	85 (12.3%)	585 (84.9%)	1.82
12.h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies. n=731	Product	13 (1.8%)	119 (16.3%)	599 (81.9%)	1.80
13.c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams. n=686	Product	13 (1.9%)	108 (15.7%)	565 (82.4%)	1.80
13.d. The curriculum promotes health promotion as an important learning outcome. n=673	Product	11 (1.6%)	136 (20.2%)	526 (78.2%)	1.77
13.b. The curriculum equips students with the ability to prescribe drugs. n=677	Product	15 (2.2%)	139 (20.5%)	523 (77.3%)	1.75
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors. n=670	Product	19 (2.8%)	140 (20.9%)	511 (76.3%)	1.73
12.j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed. n=727	Product	20 (2.8%)	178 (24.5%)	529 (72.8%)	1.70
13.i. The curriculum develops students' ability to assess their own competence. n=680	Product	37 (5.4%)	157 (23.1%)	486 (71.5%)	1.66
12.i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects. n=733	Product	18 (2.5%)	225 (30.7%)	490 (66.8%)	1.64
12.c. Learning outcomes are harmonized across medical schools in the same country. n=688	Product	59 (8.6%)	174 (25.3%)	455 (66.1%)	1.58
13.e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics. n=658	Product	28 (4.3%)	248 (37.7%)	382 (58.1%)	1.54

Table 19: Future Curriculum Trends 'The Student' – Major Trends (Mean 1.5-2.0)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies. n=667	Student	23 (3.4%)	179 (26.8%)	465 (69.7%)	1.66
15.a. Attention is paid to student's health and wellbeing. n=667	Student	44 (6.6%)	191 (28.6%)	432 (64.8%)	1.58
14.b. Students admitted to study medicine are from diverse backgrounds. n=664	Student	44 (6.6%)	221 (33.3%)	399 (60.1%)	1.53

Table 20: Future Curriculum Trends 'The Process' – Major Trends (Mean 1.5-2.0)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
21.a. There is a committee responsible for curriculum planning. n=626	Process	10 (1.6%)	43 (6.9%)	573 (91.5%)	1.90
20.a. The curriculum is systematically and objectively evaluated. n=636	Process	19 (3.0%)	66 (10.4%)	551 (86.6%)	1.84
16.j. Students work in small groups. n=682	Process	14 (2.1%)	91 (13.3%)	577 (84.6%)	1.83
17.b. Training is provided in clinical skills units. n=667	Process	11 (1.6%)	107 (16.0%)	549 (82.3%)	1.81
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff. n=628	Process	17 (2.7%)	92 (14.6%)	519 (82.6%)	1.80
19.a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor. n=619	Process	15 (2.4%)	103 (16.6%)	501 (80.9%)	1.79
19.i. Assessment is closely matched to the stated learning outcomes. n=645	Process	31 (4.8%)	76 (11.8%)	538 (83.4%)	1.79
17.a. Students are trained in Ambulatory care settings. n=637	Process	9 (1.4%)	128 (20.1%)	500 (78.5%)	1.77
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment. n=620	Process	27 (4.4%)	95 (15.3%)	498 (80.3%)	1.76
16.g. Students use simulators or devices to complement the use of real patients. n=666	Process	15 (2.3%)	137 (20.6%)	514 (77.2%)	1.75
21.g. One or more staff with specific training and expertise in education support the local education initiative. n=594 future	Process	23 (3.9%)	104 (17.5%)	467 (78.6%)	1.75
22.f. Programmes are in place to assist staff to keep up to date with their teaching expertise. n=617	Process	31 (5.0%)	105 (17.0%)	481 (78.0%)	1.73
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase. n=630	Process	25 (4.0%)	125 (19.8%)	480 (76.2%)	1.72
21.f. A medical education unit or department supports the education initiative in the medical school. n=608	Process	38 (6.3%)	94 (15.5%)	476 (78.3%)	1.72
21.h. Decisions about the curriculum are based on an examination of the evidence reported in medical education. n=593	Process	35 (5.9%)	96 (16.2%)	462 (77.9%)	1.72
16.l. Opportunities are provided specifically to help students develop team work skills. n=668	Process	31 (4.6%)	135 (20.2%)	502 (75.1%)	1.71
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum. n=638	Process	30 (4.7%)	125 (19.6%)	483 (75.7%)	1.71
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training. n=634	Process	31 (4.9%)	127 (20.0%)	476 (75.1%)	1.70
21.b. Students are full members of the curriculum planning committee. n=608	Process	31 (5.1%)	127 (20.9%)	450 (74.0%)	1.69
22.c. Professionalism in teaching is acknowledged and rewarded in the school. n=616	Process	36 (5.8%)	127 (20.6%)	453 (73.5%)	1.68
16.a. Electronic versions of printed medical books are used. n=648	Process	25 (3.9%)	164 (25.3%)	459 (70.8%)	1.67
17.c. Training is provided in the local community. n=641	Process	26 (4.1%)	171 (26.7%0	444 (69.3%)	1.65
22.e. All staff members are expected to have had training in teaching. n=626	Process	51 (8.1%)	117 (18.7%)	458 (73.2%)	1.65
16.b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities. n=672	Process	18 (2.7%)	206 (30.7%)	448 (66.7%)	1.64
19.l. Staff with training and experience in assessment support the assessment programme in the medical school. n=613	Process	50 (8.2%)	122 (19.9%)	441 (71.9%)	1.64
17.e. Training is provided through work-based learning such as shadowing a junior doctor. n=625	Process	32 (5.1%)	166 (26.6%)	427 (68.3%)	1.63
16.h. People are trained as standardised patients and used to complement work with real patients. n=666	Process	40 (6.0%)	183 (27.5%)	443 (66.5%)	1.61
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them. n=658	Process	26 (4.0%)	207 (31.5%)	425 (64.6%)	1.61
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness. n=610	Process	39 (6.4%)	161 (26.4%)	410 (67.2%)	1.61
16.f. Lecture content is available through electronic recording. n=660	Process	50 (7.6%)	171 (25.9%0	439 (66.5%)	1.59
18.f. A problem-based approach is adopted with the learning structured around a set of problems. n=656	Process	35 (5.3%)	206 (31.4%)	415 (63.6%)	1.58
19.b. Assessment is integrated rather than each subject being assessed independently. n=617	Process	56 (9.1%)	162 (26.3%)	339 (64.7%)	1.56
19.c. Multiple Choice Questions (MCQs) are used to assess students. n=632	Process	25 (4.0%)	230 (36.4%)	377 (59.7%)	1.56
22.d. Staff members can be promoted on the basis of their performance as a teacher. n=604	Process	62 (10.3%)	147 (24.3%)	395 (65.4%)	1.55
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning. n=647	Process	46 (7.1%)	204 (31.5%)	397 (61.4%)	1.54

Sixteen envisioned future curriculum trends relate to 'The Product', three to 'The Student; and 35 to 'The Process'. The highest scoring envisioned future curriculum trends for 'The Product' (Table 18) were: the curriculum having well-defined and easily accessible learning outcomes; emphasising the importance of attitudes and professionalism and learning outcomes including communication skills,. The highest scoring desired future trends in relation to 'The Student' (Table 19) were: the opportunity for students to have recognised periods of study abroad; attention to student's health and well-being; and student's with diverse backgrounds being admitted to study. The highest scoring desired future trends in relation to 'The Process' (Table 20) were: there being a committee responsible for curriculum planning; the curriculum being systematically and objectively evaluated; and students working in small groups.

3.1.3.2 Minor Trends

Tables 21, 22 and 23 summarise the minor future curriculum trends. Four of the minor trends related to 'The Product', 7 to 'The Student' and 17 to 'The Process'. The highest scoring minor future trends relating to 'The Product' (Table 21) were: the harmonisation of learning outcomes across medical schools in Europe; the curriculum preparing students with the skills expected of a global citizen; and graduate students being equipped with teaching. The highest scoring minor future trends relating to 'The Student' (Table 22) were: students having a high level of IT literacy; students contributing to teaching as peer tutors; and selection methods assessing a range of abilities, not just academic achievement. The highest scoring minor future trends relating to 'The Process' were: the use of portfolios in student assessment; the use of virtual patients presented electronically; and the use of electronic assessment.

Table 21: Future Curriculum Trends 'The Product' – Minor Trends (Mean 0.5-1.49)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools. n=521	Product	55 (10.6%)	169 (32.4%)	297 (57.0%)	1.46
13.h. The curriculum prepares students with the skills expected of global citizens. n=639	Product	67 (10.5%)	235 (36.8%)	337 (52.7%)	1.42
13.g. The graduate of the medical school is equipped with skills in teaching. n=661	Product	70 (10.6%)	319 (48.3%)	272 (41.1%)	1.31
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine. n=649	Product	105 (16.2%)	387 (59.6%)	157 (24.2%)	1.08

Table 22: Future Curriculum Trends 'The Student' – Minor Trends (Mean 0.5-1.49)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning. n=653	Student	63 (9.6%)	206 (31.5%)	384 (58.8%)	1.49
15.c. Students contribute to the teaching programme as peer tutors. n=649	Student	47 (7.2%)	266 (41.0%)	336 (51.8%)	1.45
14.e. Selection methods are used that assess a range of abilities and not just academic achievement. n=669	Student	107 (16.0%)	178 (26.6%)	384 (57.4%)	1.41
15.d. Students are co-authors and collaborate in the development of learning resources. n=645	Student	62 (9.6%)	312 (48.4%)	271 (42.0%)	1.32
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress. n=634	Student	94 (14.8%)	267 (42.1%)	273 (43.1%)	1.28
14.a. There are an increased number of students admitted to medical schools to study medicine. n=634	Student	119 (18.8%)	241 (38.0%)	274 (43.2%)	1.24
14.c. Students admitted to study medicine have a first degree in another area. n=635	Student	211 (33.2%)	280 (44.1%)	144 (22.7%)	0.89

Table 23: Future Curriculum Trends 'The Process' – Minor Trends (Mean 0.5-1.49)

Curriculum Trend	Category	Future Developments			
		Not	Minor	Major	Mean
19.f. Portfolios are used as a tool to assess students' competence. n=596	Process	60 (10.1%)	196 (32.9%)	340 (57.0%)	1.47
16.i. Virtual patients presented electronically are used. n=642	Process	60 (9.3%)	234 (36.4%)	348 (54.2%)	1.45
19.e. Electronic assessment is used. n=617	Process	63 (10.2%)	218 (35.3%)	336 (54.5%)	1.44
16.e. Less reliance is placed on the use of lectures. n=639	Process	62 (9.7%)	242 (37.9%)	335 (52.4%)	1.43
22.b. Other healthcare professionals contribute to the teaching of medical students. n=626	Process	37 (5.9%)	286 (45.7%)	303 (48.4%)	1.42
17.d. Training is provided in a rural setting in addition to an urban setting. n=627	Process	73 (11.6%)	249 (39.7%)	305 (48.6%)	1.37
21.e. Recent graduates are consulted in curriculum planning. n=565	Process	84 (14.9%)	211 (37.3%)	270 (47.8%)	1.33
19.k. A progress test is used. n=558	Process	110 (19.7%)	183 (32.8%)	265 (47.5%)	1.28
19.g. Other professions as well as doctors contribute to the assessment of students. n=604	Process	98 (16.2%)	269 (44.5%)	237 (39.2%)	1.23
21.d. Other health professionals are consulted in planning the curriculum. n=579	Process	99 (17.1%)	248 (42.8%)	232 (40.1%)	1.23
16.c. Some courses are available entirely online. n=660	Process	126 (19.1%)	289 (43.8%)	245 (37.1%)	1.18
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure). n=426	Process	117 (27.5%)	126 (29.6%)	183 (43.0%)	1.15
18.e. Students for part of the course are taught alongside students from other professions. n=631	Process	132 (20.9%)	290 (46.0%)	209 (33.1%)	1.12
19.j. There is an element of peer assessment where students assess each other. n=602	Process	115 (19.1%)	311 (51.7%)	176 (29.2%)	1.10
19.h. Patients contribute to the assessment or rating of the students' performance. n=598	Process	145 (24.2%0	288 (48.2%)	165 (27.6%)	1.03
16.d. Games are used to assist medical students in their learning. n=623	Process	136 (21.8%)	353 (56.7%0	134 (21.5%)	1.00
21.c. Members of the public are consulted in curriculum planning. n=553	Process	168 (30.4%)	228 (41.2%)	157 (28.4%)	0.98

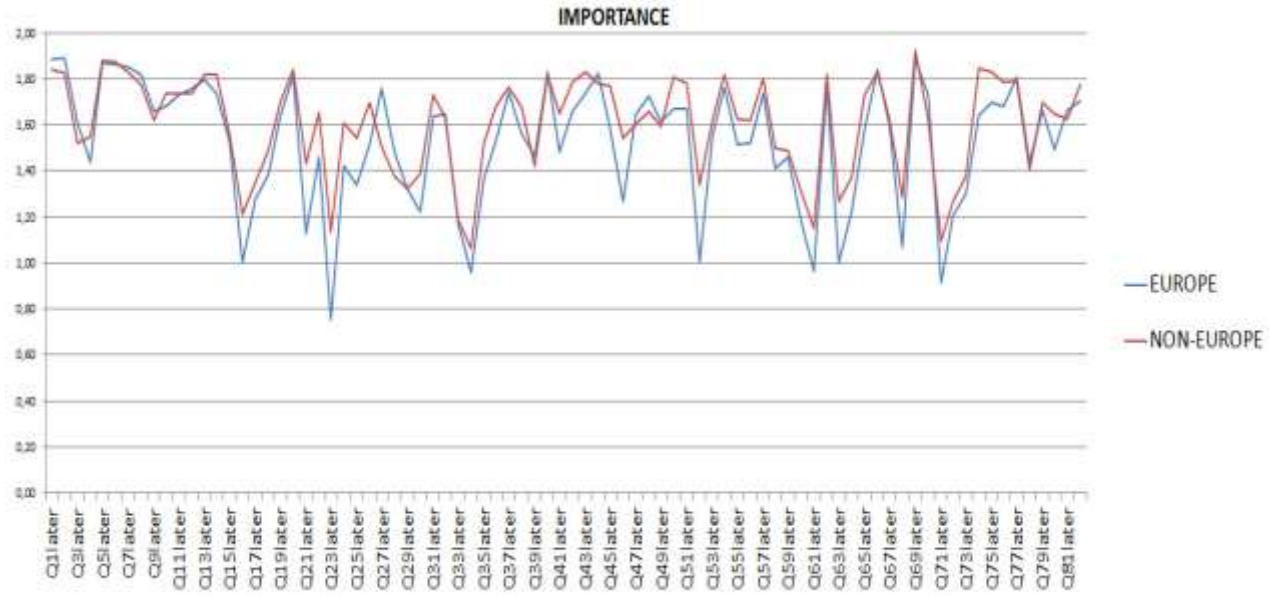
3.1.3.3 Not a Trend

No future curriculum trends had a mean rating below 0.5.

3.1.3.4 Geographic Comparison – EU/non-EU

This section compares the results of future curriculum trends between EU and non-EU countries. Only the results found to be statistically significant are reported. Figure 6 demonstrates the differences in future importance of curriculum trends between European and non-European countries. Whilst some variations exist it can be seen that in general the pattern is the same for European and non-European countries. The mean rates for European respondents was 1.53 ± 0.59 and for non-European respondents 1.60 ± 0.56.

Figure 6: Mean ratings of future trends by European and non-European respondents



EUROPE: 1.53±0.59

NON-EUROPE: 1.60±0.56

Table 24 summarises the statistically significant differences between EU and non-EU countries relating to 'The Product'.

Table 24: Future Curriculum Trends – 'The Product' non-EU>EU

Curriculum Trend	Region	Future Position				
		Not	Minor	Major	Mean	Sig.
13.d. The curriculum promotes health promotion as an important learning outcome.	EU n=422	7 (1.7%)	98 (23.2%)	317 (75.1%)	1.73	p<0.001
	Non-EU n=251	4 (1.6%)	38 (15.1%)	209 (83.3%)	1.82	
13f. Expected learning outcomes include an understanding of complementary or alternative medicine.	EU n=446	200 (44.8%)	225 (50.4%)	21 (4.7%)	0.60	p<0.05
	Non-EU n=294	110 (37.4%)	162 (55.1%)	22 (7.5%)	0.70	

A higher proportion of non-EU than EU respondents reported health promotion to be an important learning outcome; and an understanding of alternative or complementary medicine as an expected learning outcome.

Tables 25 and 26 summarise the statistically significant differences between EU and non-EU countries relating to 'The Student'.

Table 25: Future Curriculum Trends – 'The Student' EU > non-EU

Curriculum Trend	Region	Future Position				
		Not	Minor	Major	Mean	Sig.
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	EU n=422	11 (2.6%)	81 (19.2%)	330 (78.2%)	1.76	p<0.001
	Non-EU n=245	12 (4.9%)	98 (40.0%)	135 (55.1%)	1.50	

Table 26: Future Curriculum Trends – 'The Student' non-EU > EU

Curriculum Trend	Region	Future Position				
		Not	Minor	Major	Mean	Sig.
14.b. Students admitted to study medicine are from diverse backgrounds.	EU n=409	31 (7.6%)	159 (38.9%)	219 (53.5%)	1.46	p<0.001
	Non-EU n=255	13 (5.1%)	62 (24.3%)	180 (70.6%)	1.65	
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.	EU n=403	48 (11.9%)	138 (34.2%)	217 (53.8%)	1.42	p<0.001
	Non-EU n=250	15 (6.0%)	68 (27.2%)	167 (66.8%)	1.61	
15.a. Attention is paid to student's health and wellbeing.	EU n=417	34 (8.2%)	135 (32.4%)	248 (59.5%)	1.51	p<0.001
	Non-EU n=250	10 (4.0%)	56 (22.4%)	184 (73.6%)	1.70	
14.a. There are an increased number of students admitted to medical schools to study medicine.	EU n=397	95 (23.9%)	155 (39.0%)	147 (37.0%)	1.13	p<0.05
	Non-EU n=237	24 (10.1%)	86 (36.3%)	127 (53.6%)	1.43	
14.c. Students admitted to study medicine have a first degree in another area.	EU n=400	148 (37.0%)	202 (50.5%)	50 (12.5%)	0.76	p<0.001
	Non-EU n=235	63 (26.8%)	78 (33.2%)	94 (40.0%)	1.13	
14.e. Selection methods are used that assess a range of abilities and not just academic achievement.	EU n=414	76 (18.4%)	123 (29.7%)	215 (51.9%)	1.34	p<0.001
	Non-EU n=255	31 (12.2%)	55 (21.6%)	169 (66.3%)	1.54	
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	EU n=401	65 (16.2%)	182 (45.4%)	154 (38.4%)	1.22	p<0.001
	Non-EU n=233	29 (12.4%)	85 (36.5%)	119 (51.1%)	1.39	

A higher proportion of EU than non-EU respondents desired recognised study abroad periods for students to be a major future curriculum trend. In contrast a higher proportion of non-EU than EU respondents desired high levels of IT literacy, attention to student health and well-being, an increasing number of students being admitted to medical school, students with a first degree being admitted to study medicine , student selection based on a range of abilities not just academic achievement, and the teaching programme being adapted to individual student needs to be major future curriculum trends.

Table 27 summarises the statistically significant differences between EU and non-EU countries relating to 'The Process'.

Table 27: Future Curriculum Trends – 'The Process' EU>non-EU

Curriculum Trend	Region	Future Position				
		Not	Minor	Major	Mean	Sig.
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.	EU n=404	18 (4.5%)	75 (18.6%)	311 (77.0%)	1.73	p<0.05
	Non-EU n=230	13 (5.7%)	52 (22.6%)	165 (71.7%)	1.66	
21.b. Students are full members of the curriculum planning committee.	EU n=385	17 (4.4%)	71 (18.5%)	297 (77.1%)	1.73	p<0.001
	Non-EU n=223	14 (6.3%)	56 (25.1%)	153 (68.6%)	1.62	

A higher proportion of EU than non-EU respondents desired a planned continuum of learning between undergraduate and postgraduate training and students to be full members of curriculum planning committees to be major future curriculum trends.

Table 28 summarises the statistically significant differences between non-EU and EU countries relating to ;'The Process'.

Table 28: Future Curriculum Trends – 'The Process' non-EU>EU

Curriculum Trend	Region	Future Position				
		Not	Minor	Major	Mean	Sig.
16.a. Electronic versions of printed medical books are used.	EU n=405	17 (4.2%)	114 (28.1%)	274 (67.7%)	1.63	p<0.05
	Non-EU n=243	8 (3.3%)	50 (20.6%)	185 (76.1%)	1.73	
16.e. Less reliance is placed on the use of lectures.	EU n=390	45 (11.5%)	157 (40.3%)	188 (48.2%)	1.37	p<0.005
	Non-EU n=249	17 (6.8%)	85 (34.1%)	147 (59.0%)	1.52	
16.f. Lecture content is available through electronic recording.	EU n=414	37 (8.9%)	119 (28.7%)	258 (62.3%)	1.53	p<0.005
	Non-EU n=246	13 (5.3%)	52 (21.1%)	181 (73.6%)	1.68	
16.h. People are trained as standardised patients and used to complement work with real patients.	EU n=410	27 (6.6%)	126 (30.7%)	257 (62.7%)	1.56	p<0.01
	Non-EU n=256	13 (5.1%)	57 (22.3%)	186 (72.7%)	1.68	
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning.	EU n=406	35 (8.6%)	141 (34.7%)	230 (56.7%)	1.48	p<0.005
	Non-EU n=241	11 (4.6%)	63 (26.1%)	167 (69.3%)	1.65	
16.l. Opportunities are provided specifically to help students develop team work skills.	EU n=417	26 (6.2%)	91 (21.8%)	300 (71.9%)	1.66	p<0.005
	Non-EU n=251	5 (2.0%)	44 (17.5%)	202 (80.5%)	1.78	
17.a. Students are trained in Ambulatory care settings.	EU n=399	6 (1.5%)	94 (23.6%)	299 (74.9%)	1.73	p<0.05
	Non-EU n=238	3 (1.3%)	34 (14.3%)	201 (84.5%)	1.83	
17.c. Training is provided in the local community.	EU n=397	25 (6.3%)	116 (29.2%)	256 (64.5%)	1.58	p<0.001
	Non-EU n=244	1 (0.4%)	55 (22.5%)	188 (77.0%)	1.77	
17.d. Training is provided in a rural setting in addition to an urban setting.	EU n=393	58 (14.8%)	172 (43.8%)	163 (41.5%)	1.27	p<0.001
	Non-EU n=234	15 (6.4%)	77 (32.9%)	142 (60.7%)	1.54	
18.c. The curriculum adopts horizontal integration across the subjects	EU	19	92	285	1.67	p<0.005

taught in the same year or phase.	n=396	(4.8%)	(23.2%)	(72.0%)		
	Non-EU n=234	6 (2.6%)	33 (14.1%)	195 (83.3%)	1.81	
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.	EU n=400	21 (5.3%)	91 (22.8%)	288 (72.0%)	1.67	p<0.05
	Non-EU n=238	9 (3.8%)	34 (14.3%)	195 (81.9%)	1.78	
19.b. Assessment is integrated rather than each subject being assessed independently.	EU n=393	43 (10.9%)	104 (26.5%)	246 (62.6%)	1.52	p<0.05
	Non-EU n=224	13 (5.8%)	58 (25.9%)	153 (68.3%)	1.63	
19.c. Multiple Choice Questions (MCQs) are used to assess students.	EU n=391	19 (4.9%)	150 (38.4%)	222 (56.8%)	1.52	p<0.01
	Non-EU n=241	6 (2.5%)	80 (33.2%)	155 (64.3%)	1.62	
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.	EU n=379	18 (4.7%)	65 (17.2%)	296 (78.1%)	1.73	p<0.05
	Non-EU n=241	9 (3.7%)	30 (12.4%)	202 (83.8%)	1.80	
19.l. Staff with training and experience in assessment support the assessment programme in the medical school.	EU n=386	41 (10.6%)	79 (20.5%)	266 (68.9%)	1.58	p<0.005
	Non-EU n=227	9 (4.0%)	43 (18.9%)	175 (77.1%)	1.73	
21.f. A medical education unit or department supports the education initiative in the medical school.	EU n=375	34 (9.1%)	66 (17.6%)	275 (73.3%)	1.64	p<0.001
	Non-EU N=233	4 (1.7%)	28 (12.0%)	201 (86.3%)	1.85	
21.g. One or more staff with specific training and expertise in education support the local education initiative.	EU n=368	21 (5.7%)	70 (19.0%)	277 (75.3%)	1.70	p<0.001
	Non-EU n=226	2 (0.9%)	34 (15.0%)	190 (84.1%)	1.83	
22.d. Staff members can be promoted on the basis of their performance as a teacher.	EU n=376	46 (12.2%)	99 (26.3%)	231 (61.4%)	1.49	p<0.05
	Non-EU n=228	16 (7.0%)	48 (21.1%)	164 (71.9%)	1.65	
18.e. Students for part of the course are taught alongside students from other professions.	EU n=405	101 (24.9%)	202 (49.9%)	102 (25.2%)	1.00	p<0.001
	Non-EU n=226	31 (13.7%)	88 (38.9%)	107 (47.3%)	1.34	
19.g. Other professions as well as doctors contribute to the assessment of students.	EU n=385	67 (17.4%)	180 (46.8%)	138 (35.8%)	1.18	p<0.05
	Non-EU n=219	31 (14.2%)	89 (40.6%)	99 (45.2%)	1.31	
19.h. Patients contribute to the assessment or rating of the students' performance.	EU n=371	99 (26.2%)	193 (51.1%)	86 (22.8%)	0.97	p<0.001
	Non-EU n=220	46 (20.9%)	95 (43.2%)	79 (35.9%)	1.15	
19.j. There is an element of peer assessment where students assess each other.	EU n=375	84 (22.4%)	207 (55.2%)	84 (22.4%)	1.00	p<0.001
	Non-EU n=227	31 (13.7%)	104 (45.8%)	92 (40.5%)	1.27	
19.k. A progress test is used.	EU n=351	78 (22.2%)	117 (33.3%)	156 (44.4%)	1.22	p<0.05
	Non-EU n=207	32 (15.5%)	66 (31.9%)	109 (52.7%)	1.37	
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	EU n=256	79 (30.9%)	80 (31.3%)	97 (37.9%)	1.07	p<0.005
	Non-EU n=170	38 (22.4%)	46 (27.1%)	86 (50.6%)	1.28	
21.c. Members of the public are consulted in curriculum planning.	EU n=353	118 (33.4%)	147 (41.6%)	88 (24.9%)	0.92	p<0.005
	Non-EU n=200	50 (25.0%)	81 (40.5%)	69 (34.5%)	1.10	

A higher proportion of non-EU than EU respondents desired the following curriculum trends to be major future trends: electronic versions of medical books used; less reliance on the use of lectures; lecture content available through electronic recording ; standardised patients used to complement work with real patients; students encouraged to be part of a social network to support their learning; opportunities for students to develop teamwork skills; students trained in ambulatory care settings; training provided in the local community; training provided in rural and urban settings; horizontal integration of the curriculum across subjects; vertical integration of the curriculum with themes running across different years; integrated assessment; MCQs used to assess students; the OSCE used in assessment; staff with training and experience of assessment ; a medical education unit supporting the medical school; staff with training and expertise in education support; staff promotion on the basis of teaching performance; students taught alongside students of other professions for part of the course; other professions contributing to the assessment of students; patients contributing to assessment of student performance; an element of peer assessment; use of progress tests; measurement of the education environment; and public consultation in curriculum planning.

3.1.3.5 Effect of other variables – gender, age, professional background, role in institution.

This section explores the influence of other variables such as age, gender, professional background and role in institution on the responses. As noted in the discussion of methods in Section 3.4, the following categories were used as the baseline for the initial regression model: Men, Doctors, Heads of Institutions, and Age Group 30-49. Therefore the following tables illustrate those trends where there is a significant variation from the baseline or reference group.

Table 29 summarises differences in curriculum trends by gender.

Table 29: Future Curriculum Trends – variations by gender

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Female	1.92	0.08	p< 0.005
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	Female	1.95	0.06	p<0.05
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	Product	Female	1.89	0.12	p<0.001
20.a. The curriculum is systematically and objectively evaluated.	Process	Female	1.88	0.11	p<0.001
16.j. Students work in small groups.	Process	Female	1.96	0.07	p<0.05
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Female	1.86	0.11	p<0.001
16.d. Games are used to assist medical students in their learning.	Process	Female	1.00	0.2	p<0.001
18.e. Students for part of the course are taught alongside students from other professions.	Process	Female	1.13	0.13	p<0.005

Women were marginally more likely than their male counterparts to suggest that the following were desirable future curriculum trends: the importance of attitudes and professionalism; decisions about the curriculum being based on stated learning outcomes; the curriculum equipping students with critical thinking ability; the curriculum being systematically and objectively evaluated; students working in small groups; the curriculum empowering students to take responsibility for their own and lifelong learning; the use of games to assist student learning, and the teaching off students alongside students from other professions.

Table 30 the differences in curriculum trends by age.

Table 30 Future Curriculum Trends – variations by age group

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
20.a. The curriculum is systematically and objectively evaluated.	Process	<20	1.88	0.29	p<0.005
16.j. Students work in small groups.	Process	<20	1.96	0.25	p<0.01
16.d. Games are used to assist medical students in their learning.	Process	<20	1.00	0.3	p<0.05
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	<20	1.06	0.25	p<0.05
16.c. Some courses are available entirely online.	Process	<20	1.17	0.32	p<0.01
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	20-29	1.04	0.31	p<0.05
21.a. There is a committee responsible for curriculum planning.	Process	50-65	1.94	0.08	p<0.005
20.a. The curriculum is systematically and objectively evaluated.	Process	50-65	1.88	0.08	p<0.05
18.e. Students for part of the course are taught alongside students from other professions.	Process	65+	1.13	-0.24	p<0.05

Respondents aged under 20 were more likely than those in the 30-49 years age group to report that the following were desired future curriculum trends: the curriculum being systematically and objectively evaluated; students working in small groups; games being used to assist learning; patients contributing to an assessment of student performance; and some courses being available entirely online. Respondents in the 20-29 years age group were more likely than those in the 30-49 years age group to consider measurement of the educational environment in the medical school to be an important future curriculum trend; whilst those in the 50-65 years age group were more likely to see a curriculum planning committee, and the systematic and objective evaluation of curriculum to be important future trends. In contrast, respondents in the 65 years and over age group were less likely than those in the 30-49 years age group to see the teaching of students alongside other professions as being an important future trend.

Table 31 summarises the differences in curriculum trends by professional background.

Table 31: Future Curriculum Trends – variations by professional background

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
20.a. The curriculum is systematically and objectively evaluated.	Process	Nurse	1.88	0.19	p<0.01
16.j. Students work in small groups.	Process	Nurse	1.96	0.11	0.117?
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Nurse	1.86	0.17	p<0.05
14.c. Students admitted to study medicine have a first degree in another area.	Student	Nurse	1.08	0.28	p<0.01
16.d. Games are used to assist medical students in their learning.	Process	Nurse	1.00	0.22	p<0.05
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	Product	Nurse	0.95	0.31	p<0.005
19.j. There is an element of peer assessment where students assess each other.	Process	Nurse	1.17	0.38	p<0.001
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	Nurse	1.04	0.34	p<0.01
21.c. Members of the public are consulted in curriculum planning.	Process	Other Occup.	1.19	-0.14	p<0.05
16.d. Games are used to assist medical students in their learning.	Process	Other Occup.	1.00	-0.1	p<0.05
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	Product	Other occupation	0.95	0.13	p<0.005
16.c. Some courses are available entirely online.	Process	Other occupation	1.17	-0.15	p<0.005
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Layperson	1.96	0.2	p<0.001
16.j. Students work in small groups.	Process	Layperson	1.96	0.12	p<0.05
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Layperson	1.86	0.17	p<0.01
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	Product	Layperson	0.95	0.29	p<0.001

Respondents with a professional background in nursing were more likely than their doctor counterparts to report that the following were desired future curriculum trends: systematic and objective evaluation of the curriculum; students work in small groups; the curriculum empowering students to take responsibility for their own learning and life-long learning; students admitted with a first degree in another area; games used to assist student learning; expected learning outcomes including an understanding of alternative or complementary medicine; peer assessment and the measurement of the educational environment in the medical school. Respondents who were lay people were more likely than their doctor counterparts to stress the future importance of the following curriculum trends: having well-defined and easily accessible learning outcomes; students work in small groups; the curriculum empowering students to take responsibility for their own learning and lifelong learning; and expected learning outcomes including an understanding of complementary or alternative medicine. Respondents with professional backgrounds in 'other occupations were more likely than their doctor counterparts to suggest the future importance of an understanding of alternative or complementary medicine as a future trend; but less likely than doctors to stress the future importance of the following trends: public consultation in curriculum planning; the use of games to assist medical student learning; and the availability of some courses entirely online.

Table 32 summarises the differences in curriculum trends by their role in their institution.

Table 32: Future Curriculum Trends – variations by role in institution.

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
21.a. There is a committee responsible for curriculum planning.	Process	Med-Ed Unit Head	1.94	-0.11	p<0.005
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Med-Ed Unit Head	1.96	-0.09	p<0.05
12.f. Learning outcomes include communication skills.	Product	Med-Ed Unit Head	1.94	-0.11	p<0.05
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	Med-Ed Unit Head	1.95	-0.13	p<0.05
16.j. Students work in small groups.	Process	Med-Ed Unit Head	1.96	-0.10	p<0.001
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Med-Ed Unit Head	1.86	-0.21	p<0.01
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	IR/EU Project Head	1.86	-0.25	p<0.05
19.j. There is an element of peer assessment where students assess each other.	Process	IR/EU Project Head	1.17	-0.3	p<0.05
18.e. Students for part of the course are taught alongside students from other professions.	Process	IR/EU Project Head	1.13	-0.31	p<0.05
21.a. There is a committee responsible for curriculum planning.	Process	Teacher	1.94	-0.08	p<0.01
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Teacher	1.96	-0.12	p<0.001
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Teacher	1.92	-0.08	p<0.05
12.f. Learning outcomes include communication skills.	Product	Teacher	1.94	-0.11	p<0.05
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	Teacher	1.95	-0.16	p<0.001
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	Product	Teacher	1.89	-0.13	p<0.001
20.a. The curriculum is systematically and objectively evaluated.	Process	Teacher	1.88	-0.14	p<0.001
16.j. Students work in small groups.	Process	Teacher	1.96	-0.13	p<0.001
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Teacher	1.86	-0.19	p<0.001

14.c. Students admitted to study medicine have a first degree in another area.	Student	Teacher	1.08	0.14	p<0.01
21.c. Members of the public are consulted in curriculum planning.	Process	Teacher	1.19	-0.12	p<0.05
18.e. Students for part of the course are taught alongside students from other professions.	Process	Teacher	1.13	-0.11	p <0.05
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	Admin	1.06	0.31	p<0.05
18.e. Students for part of the course are taught alongside students from other professions.	Process	Admin	1.13	0.29	p<0.05
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	Admin	1.04	0.34	p<0.05
16.c. Some courses are available entirely online.	Process	Admin	1.17	0.40	p<0.01
21.a. There is a committee responsible for curriculum planning.	Process	Other role	1.94	-0.11	p<0.005
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Other role	1.96	-0.13	p<0.005
12.f. Learning outcomes include communication skills.	Product	Other role	1.94	-0.11	p<0.05
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	Other role	1.95	-0.15	p<0.001
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	Product	Other role	1.89	-0.10	p<0.001
20.a. The curriculum is systematically and objectively evaluated.	Process	Other role	1.88	-0.15	p<0.001
16.j. Students work in small groups.	Process	Other role	1.96	-0.18	p<0.001
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Other role	1.86	-0.16	p<0.001
21.a. There is a committee responsible for curriculum planning.	Process	Student	1.94	-0.13	p<0.001
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	Student	1.96	-0.22	p<0.001
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	Student	1.92	-0.11	p<0.005
12.f. Learning outcomes include communication skills.	Product	Student	1.94	-0.15	p<0.05
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	Student	1.95	-0.24	p<0.001
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	Product	Student	1.89	-0.18	p<0.001
20.a. The curriculum is systematically and objectively evaluated.	Process	Student	1.88	-0.30	p<0.001
16.j. Students work in small groups.	Process	Student	1.96	-0.33	p<0.001
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	Student	1.86	-0.32	p<0.001
21.c. Members of the public are consulted in curriculum planning.	Process	Student	1.19	-0.15	p<0.05
16.d. Games are used to assist medical students in their learning.	Process	Student	1.00	-0.31	p<0.001
19.j. There is an element of peer assessment where students assess each other.	Process	Student	1.17	-0.27	p<0.001
18.e. Students for part of the course are taught alongside students from other professions.	Process	Student	1.13	-0.18	p<0.05

Respondents who were Heads of Medical Education were less likely than Heads of Institutions to see the following as desired future curriculum trends: a curriculum planning committee; a curriculum with well-defined and easily accessible learning outcomes; learning outcomes including communication skills; decisions about the curriculum being based on stated learning outcomes, the curriculum being systematically and objectively evaluated; students working in small groups; and students being empowered to take responsibility for their own learning and lifelong learning. The Heads of International Relations or EU projects were less likely than the Heads of Institutions to see the following as desired future curriculum trends: the curriculum empowering students to take responsibility for their own learning; peer assessment and students being taught alongside students from other professions.

Respondents who were teachers were more likely to respond that the admittance of students with a first degree in another area was a desired future curriculum trend than Heads of Institutions. Conversely, teachers were less likely than Heads of Institutions to suggest that the following were important future curriculum trends: a curriculum planning committee; well-defined and easily

accessible learning outcomes; the importance of attitude s and professionalism in the curriculum; learning outcomes including communication skills; decisions about the curriculum being based on stated learning outcomes; the curriculum equipping students with the ability of critical thinking; the curriculum being systematically and objectively evaluated, students working in small groups; the curriculum empowering students to take responsibility for their own learning and lifelong learning; the public being consulted in curriculum planning; and students being taught alongside students of other professions.

Respondents holding an administrative role in their institution were more likely than the Heads of Institutions to see the following as desirable future curriculum trends: patients contributing to the assessment of student performance; students being taught alongside students of other professions; the educational environment being measures; and some courses being available entirely online. Respondents who hold 'other roles' in their institution were also less likely than Heads of Institutions to see the following as desired future curriculum trends: a curriculum planning committee; well defined and easily accessible learning outcomes; learning outcomes including communication skills; decisions about the curriculum being based on stated learning outcomes; the curriculum equipping students with the ability for critical thinking; the curriculum being systematically and objectively evaluated; students working in small groups; and the curriculum empowering students to take responsibility for their own learning and lifelong learning.

Finally students were less likely than the Heads of Institutions to see the following as desirable future curriculum trends: a curriculum planning committee; well-defined and easily accessible learning outcomes; the curriculum emphasising the importance of attitudes and professionalism; learning outcomes including communication skills; decisions about the curriculum being based on stated learning outcomes; the curriculum equipping students with the ability for critical thinking; the curriculum being systematically and objectively evaluated; students working in small groups; the curriculum empowering students to take responsibility for their own learning and lifelong learning; the public being consulted in curriculum planning; games being used to assist student learning; peer assessment; and students being taught alongside students of other professions.

3.1.4 Curriculum Trends: Desired Change

This section reviews the desired change in curriculum trends by comparing the differences between respondents' views of the current position of curriculum trends and their future vision.

3.1.4.1 Global position

Tables 33 and 34 rank the findings of the degree of change in curriculum trends ranked from high to low.

Table 33: Expected Change in Curriculum Trends >0.50

Curriculum Trend	Category	Change
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	Product	0.76
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	0.74
16.i. Virtual patients presented electronically are used.	Process	0.74
21.e. Recent graduates are consulted in curriculum planning.	Process	0.74
22.d. Staff members can be promoted on the basis of their performance as a teacher.	Process	0.71
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	Student	0.70
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.	Process	0.69
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	0.69
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.	Process	0.68
22.c. Professionalism in teaching is acknowledged and rewarded in the school.	Process	0.68
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	0.67
22.e. All staff members are expected to have had training in teaching.	Process	0.67
19.f. Portfolios are used as a tool to assess students' competence.	Process	0.66
16.b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities.	Process	0.62
16.c. Some courses are available entirely online.	Process	0.62
18.e. Students for part of the course are taught alongside students from other professions.	Process	0.62
13.i. The curriculum develops students' ability to assess their own competence.	Product	0.61
21.d. Other health professionals are consulted in planning the curriculum.	Process	0.61
15.d. Students are co-authors and collaborate in the development of learning resources.	Student	0.60
16.l. Opportunities are provided specifically to help students develop team work skills.	Process	0.60
13.g. The graduate of the medical school is equipped with skills in teaching.	Product	0.59
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning.	Process	0.59
19.b. Assessment is integrated rather than each subject being assessed independently.	Process	0.59
19.e. Electronic assessment is used.	Process	0.59
19.j. There is an element of peer assessment where students assess each other.	Process	0.59
21.c. Members of the public are consulted in curriculum planning.	Process	0.59
12.c. Learning outcomes are harmonized across medical schools in the same country.	Product	0.58
14.e. Selection methods are used that assess a range of abilities and not just academic achievement.	Student	0.58
16.d. Games are used to assist medical students in their learning.	Process	0.58
13.c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams.	Product	0.57
13.h. The curriculum prepares students with the skills expected of global citizens.	Product	0.57
19.k. A progress test is used.	Process	0.57
16.a. Electronic versions of printed medical books are used.	Process	0.55
21.h. Decisions about the curriculum are based on an examination of the evidence reported in medical education.	Process	0.55
16.f. Lecture content is available through electronic recording.	Process	0.54
19.a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor.	Process	0.54
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	Product	0.52
19.g. Other professions as well as doctors contribute to the assessment of students.	Process	0.52
19.l. Staff with training and experience in assessment support the assessment programme in the medical school.	Process	0.52
22.f. Programmes are in place to assist staff to keep up to date with their teaching expertise.	Process	0.52
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	Product	0.51
13.e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics.	Product	0.50

Three of the curriculum trends with the highest degree of desired change relate to 'The Product': curriculum preparing students to report analyse and prevent medical errors; learning outcomes being harmonised between medical schools in Europe; and the curriculum developing students' ability to assess their own competence. Two curriculum trends with the highest degree of desired change relate to 'The Student': the teaching and learning programme being adapted to the individual learning needs of students; and students being co-authors and collaborating in the development of learning resources. Fifteen of the curriculum trends with the highest degrees of desired change relate to 'The Process': the use of virtual patients; recent graduates being consulted in curriculum planning; staff members being promoted on the basis of their performance; the curriculum demonstrating a planned continuum of learning between undergraduate and postgraduate learning; the measurement of the education environment ; programmes being evaluated for their efficiency and cost-effectiveness ; professionalism in teaching being valued and rewarded; patients contributing to assessment of student performance; all staff members having training in teaching ; portfolios as an assessment tool; courses conducted as blended learning ;

some courses available entirely online; students taught alongside students of other professions; other health professions consulted in curriculum planning; and opportunities provided to help students develop teamwork skills.

Table 34: Expected Change in Curriculum Trends <0.49

Curriculum Trend	Category	Change
12.h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies.	Product	0.49
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff.	Process	0.49
15.c. Students contribute to the teaching programme as peer tutors.	Student	0.48
12b Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	Product	0.47
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.	Process	0.47
19.i. Assessment is closely matched to the stated learning outcomes.	Process	0.47
20.a. The curriculum is systematically and objectively evaluated.	Process	0.47
16.e. Less reliance is placed on the use of lectures.	Process	0.46
16.g. Students use simulators or devices to complement the use of real patients.	Process	0.46
13.d. The curriculum promotes health promotion as an important learning outcome.	Product	0.45
16.h. People are trained as standardised patients and used to complement work with real patients.	Process	0.45
17.d. Training is provided in a rural setting in addition to an urban setting.	Process	0.45
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	Product	0.44
12.j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed.	Product	0.43
15.a. Attention is paid to student's health and wellbeing.	Student	0.43
12a The curriculum has well-defined and easily accessible learning outcomes which are communicated to the students and teachers	Product	0.42
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase.	Process	0.42
17.e. Training is provided through work-based learning such as shadowing a junior doctor.	Process	0.41
18.f. A problem-based approach is adopted with the learning structured around a set of problems.	Process	0.41
17.c. Training is provided in the local community.	Process	0.40
21.f. A medical education unit or department supports the education initiative in the medical school.	Process	0.40
21.g. One or more staff with specific training and expertise in education support the local education initiative.	Process	0.40
12.i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects.	Product	0.38
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.	Process	0.38
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.	Process	0.38
21.b. Students are full members of the curriculum planning committee.	Process	0.38
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	Product	0.37
17.a. Students are trained in Ambulatory care settings.	Process	0.36
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.	Student	0.35
22.b. Other healthcare professionals contribute to the teaching of medical students.	Process	0.35
12.f. Learning outcomes include communication skills.	Product	0.32
16.j. Students work in small groups.	Process	0.27
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	Student	0.26
13.b. The curriculum equips students with the ability to prescribe drugs.	Product	0.25
17.b. Training is provided in clinical skills units.	Process	0.25
14.b. Students admitted to study medicine are from diverse backgrounds.	Student	0.20
14.c. Students admitted to study medicine have a first degree in another area.	Student	0.19
21.a. There is a committee responsible for curriculum planning.	Process	0.18
14.a. There are an increased number of students admitted to medical schools to study medicine.	Student	-0.13
19.c. Multiple Choice Questions (MCQs) are used to assess students.	Process	-0.19

Four of the curriculum trends with the lowest degree of desired change relate to 'The Product': The curriculum equipping students with the ability to prescribe drugs; Learning outcomes including communication skills; the curriculum emphasising the importance of attitudes and professionalism; and the curriculum equipping students with research skills. Five of the curriculum trends with the lowest degree of desired change relate to 'The Student': the increase in the number of students admitted to study medicine received a negative score (-0.13); students admitted to study medicine with a first degree in another area; students admitted to study medicine from diverse backgrounds;

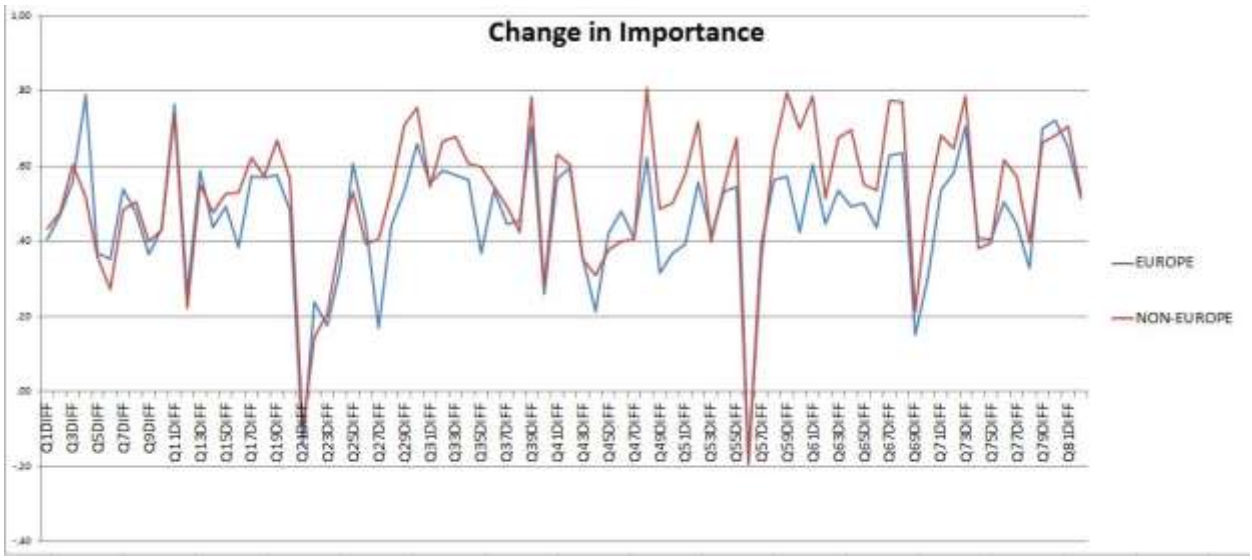
students having the ability to have recognised study abroad periods; and students having a high degree of IT literacy.

Twelve of the curriculum trends with the lowest degree of desired change relate to 'The Process': the use of MCQs to assess students has a negative score (-0.19); a curriculum planning committee (0.18); training in clinical skills units (0.25); students work in small groups (0.27); other healthcare professionals contribute to the teaching of medical students (0.35); students trained in ambulatory care settings (0.36); students are full members of curriculum planning committees (0.38); the OSCE is used in student assessment (0.38); students have the opportunity for individual in-depth study ((0.38); staff have specific training and expertise in education support (0.40); a medical education unit supports the education initiative (0.40); and training is provided in the local community (0.40).

3.1.4.2 EU/non-EU comparison

This section compares the statistically significant differences in the degree of desired change between EU and non-EU countries. Figure 7 demonstrates the differences in change in importance between European and non-European countries.

Figure 7: Mean ratings of change in importance of trends by European and non-European countries



EUROPE: 0.47±0.67

NON-EUROPE: 0.52±0.66

Table 35 summarises the statistically significant changes in the degree of expected change between EU and non-EU countries.

Table 35: Desired change – EU > non-EU

Curriculum Trend	Category	Change EU	Change Non-EU	Difference	Sig.
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	0.79	0.52	0.27	p<0.001
14.b. Students admitted to study medicine are from diverse backgrounds.	Student	0.24	0.15	0.09	p<0.05
12.f. Learning outcomes include communication skills.	Product	0.35	0.27	0.08	p<0.05

The desired degree of change in relation to two curriculum trends relating to 'The Product' was found to be higher in EU than non-EU countries: the harmonisation of learning outcomes across Europe; and learning outcomes including communication skills; and one relating to 'The Student': students admitted to study medicine from diverse backgrounds. Table 36 summarises the statistically significant changes in the degree of desired change between non-EU and EU countries.

Table 36: Desired change – 'The Product' non-EU> EU

Curriculum Trend	Category	Change EU	Change Non-EU	Difference	Sig.
19.g. Other professions as well as doctors contribute to the assessment of students.	Process	0.42	0.70	-0.28	p<0.001
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	Student	0.17	0.41	-0.24	p<0.001
19.f. Portfolios are used as a tool to assess students' competence.	Process	0.57	0.80	-0.23	p<0.001
16.e. Less reliance is placed on the use of lectures.	Process	0.37	0.60	-0.23	p<0.001
19.k. A progress test is used.	Process	0.49	0.70	-0.21	p<0.005
19.h. Patients contribute to the assessment or rating of the students' performance.	Process	0.60	0.79	-0.19	p<0.001
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.	Process	0.39	0.58	-0.19	p<0.05
21.b. Students are full members of the curriculum planning committee.	Process	0.31	0.50	-0.19	p<0.005
15.d. Students are co-authors and collaborate in the development of learning resources.	Student	0.53	0.71	-0.18	p<0.001
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.	Process	0.32	0.49	-0.17	p<0.001
18.e. Students for part of the course are taught alongside students from other professions.	Process	0.56	0.72	-0.16	p<0.005
19.j. There is an element of peer assessment where students assess each other.	Process	0.53	0.68	-0.15	p<0.01
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	Product	0.39	0.53	-0.14	p<0.05
21.c. Members of the public are consulted in curriculum planning.	Process	0.54	0.68	-0.14	p<0.005
19.b. Assessment is integrated rather than each subject being assessed independently.	Process	0.55	0.68	-0.13	p<0.05
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase.	Process	0.37	0.50	-0.13	p<0.05
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff.	Process	0.45	0.57	-0.12	p<0.05
16.c. Some courses are available entirely online.	Process	0.58	0.68	-0.10	p<0.01
17.b. Training is provided in clinical skills units.	Process	0.21	0.31	-0.10	p<0.05

The desired degree of change in relation to one 'Product' curriculum trend was found to be higher in non-EU than EU countries: that expected learning outcomes include an understanding of complementary or alternative medicine. The degree of desired change was found to be greater in non-EU than EU countries in relation to two 'Student' curriculum trends: that students have the opportunity to have recognised periods of study abroad; and students are co-authors and collaborate in the development of learning resources. The desired degree of change was found to be greater in non-EU than EU countries in relation to 16 'Process' curriculum trends: other professions contributing to the assessment of students; portfolios used in assessment; less reliance on lectures; use of progress tests; patients contributing to assessing student performance; vertical integration of curriculum; students as full members of curriculum planning committees ; in-depth

study opportunities; students taught alongside students of other professions; use of peer assessment; members of the public consulted in curriculum planning; integrated assessment; horizontal integration of curriculum; evaluation and feedback of teaching performance; the availability of some courses entirely online; training in clinical skills units.

3.1.4.3 Effect of other variables – gender, age, professional background, role in institution.

Table 37 summarises variations in the degree of desired change in curriculum trends by gender.

Table 37: Desired Change in Curriculum Trends – Variations by gender

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	Product	Female	0.76	-0.11	p< 0.05
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	Female	0.85	0.15	p<0.001
21.e. Recent graduates are consulted in curriculum planning.	Process	Female	0.62	0.11	p<0.05
22.d. Staff members can be promoted on the basis of their performance as a teacher.	Process	Female	0.70	0.09	p<0.05
22.c. Professionalism in teaching is acknowledged and rewarded in the school.	Process	Female	0.60	0.1	p<0.05
22.e. All staff members are expected to have had training in teaching.	Process	Female	0.57	0.12	p<0.05
19.f. Portfolios are used as a tool to assess students' competence.	Process	Female	0.49	0.09	p<0.05
14.a. There are an increased number of students admitted to medical schools to study medicine.	Student	Female	-0.19	-0.15	p<0.001
17.b. Training is provided in clinical skills units.	Process	Female	0.15	-0.9	p<0.05
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	Student	Female	-0.04	0.14	p<0.001

The degree of desired change in curriculum trends was higher amongst women than their male counterparts for the following trends: harmonisation of learning outcomes across Europe; recent graduates consulted in curriculum planning; staff being promoted on basis of teaching performance; professionalism in teaching being acknowledged and rewarded; staff members having training in teaching; portfolios being used to assess student competence; students having opportunities for recognised study abroad. The degree of desired change in curriculum trends was lower amongst women than their male counterparts for the following trends: the curriculum preparing students with skills to report, analyse and prevent medical errors; an increase in the numbers of students admitted to study medicine; and training provided in clinical skills units.

Table 38 summarises variations in the degree of desired change by age group.

Table 38: Desired Change in Curriculum Trends – variations by age group.

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	<20	0.85	0.57	p<0.005
16.i. Virtual patients presented electronically are used.	Process	<20	0.74	-0.30	p<0.05
17.b. Training is provided in clinical skills units.	Process	<20	0.15	-0.25	p<0.05
16.j. Students work in small groups.	Process	<20	0.06	-0.24	p<0.05
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	20-29	0.85	0.32	p<0.05
16.i. Virtual patients presented electronically are used.	Process	20-29	0.74	-0.17	p<0.05
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.	Process	20-29	0.52	0.24	p<0.05
21.a. There is a committee responsible for curriculum planning.	Process	20-29	0.06	0.28	p<0.001
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	Student	20-29	-0.04	0.21	p<0.001
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	Student	50-65	0.77	-0.10	p<0.05
14.a. There are an increased number of students admitted to medical schools to study medicine.	Student	50-65	-0.19	-0.09	p<0.05
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.	Process	65+	0.64	-0.25	p<0.05
14.c. Students admitted to study medicine have a first degree in another area.	Student	65+	0.15	0.21	p<0.01
17.b. Training is provided in clinical skills units.	Process	65+	0.15	-0.22	p<0.01

The degree of desired change in curriculum trends was higher amongst respondents under 20 years than their 30-49 years age group counterparts in relation to the harmonisation of learning outcomes across medical schools in Europe. The degree of desired change in curriculum trends was lower amongst respondents under 20 years than their 30-49 years age group counterparts in relation to the following trends: the use of virtual patients; training in clinical skills units, and students working in small groups. The degree of desired change in curriculum trends was higher amongst respondents in the 20-29 years age group than their 30-49 year counterparts in relation to the following curriculum trends: the harmonisation of learning outcomes across medical schools in Europe; programmes and courses evaluated for their efficiency and cost-effectiveness; a committee responsible for curriculum planning; and students having the opportunity for recognised study abroad. The degree of desired change was lower amongst respondents in the 20-29 age group than their 30-49 years age group counterparts in relation to the use of virtual patients.

The degree of desired change was lower amongst respondents on the 50-65 years age group than their 30-49 years counterparts in relation to teaching being adapted to the individual needs of students and an increase in the numbers of students being admitted to study medicine. The degree of desired change in curriculum trends was higher amongst respondents in the 65+ age group than those in the 30-49 years age group in relation to students being admitted to study medicine with a first degree in another area. The degree of desired change in curriculum trends was lower for respondents in the 65+ age group than those on the 30-49 age group in relation to the following trends: the curriculum having a planned continuum of learning between undergraduate and post-graduate studies; and training being provided in clinical skills units.

Table 39 summarises variations in the degree of desired change by professional background.

Table 39: Desired change in Curriculum Trends – variations by professional background

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	Product	Nurse	0.76	-0.26	p< 0.05
21.e. Recent graduates are consulted in curriculum planning.	Process	Other occupation	0.62	-0.12	p<0.05
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	Student	Other occupation	0.77	-0.12	p<0.05
14.a. There are an increased number of students admitted to medical schools to study medicine.	Student	Other occupation	-0.19	0.12	p<0.05
16.j. Students work in small groups.	Process	Layperson	0.06	0.20	p<0.01

The degree of desired change in curriculum trends was lower for respondents with a professional background in nursing than their doctor counterparts in relation to the curriculum preparing students with skills to report, analyse and prevent medical errors. Respondents with a professional background in 'other occupation' had a higher degree of desired change than doctors in relation to an increase in the number of students admitted to study medicine, but lower in relation to the consultation with recent graduates in curriculum planning, and the teaching programme being adapted to the needs of individual students. Respondents identified as 'laypeople' had a higher degree of desired change in relation to students working in small groups than their doctor counterparts

Table 40 summarises variations in the degree of desired change by the respondents' role in their institution. The degree of desired change in curriculum trends was higher amongst Heads of Medical Education than their Heads of Institutions counterparts in relation to teaching programmes being adapt to the needs of individual students, but lower in relation to their being a committee responsible for curriculum planning. The degree of desired change in curriculum trends was higher for Heads of International Relations/ EU projects than the Heads of Institutions in relation to: teaching programmes being adapted to the needs of individual students; an increase in the numbers of students admitted to study medicine; and students admitted to study medicine with a first degree in another area.

The degree of desired change in curriculum trends was higher for teachers than Heads of Institutions in relation to programmes being evaluated for efficiency and costs effectiveness, but lower in relation to the following trends: the curriculum prepares the students with the skills to report, analyse and prevent medical errors; learning outcomes being harmonised across medical schools in Europe; measurement of the education environment; and portfolios being used to assess student competence. The degree of desired change in curriculum trends was lower for those in an administrative role than Heads of Institutions in relation to the curriculum preparing students with skills to report, analyse and prevent medical errors.

Table 40: Desired change in Curriculum Trends - variations by role in Institution

Trend	Category	Group	Reference Group Coef	Difference from Reference Group Coef	Sig
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	Student	Med-Ed Unit Head	0.77	0.26	p<0.001
21.a. There is a committee responsible for curriculum planning.	Process	Med-Ed Unit Head	0.06	-0.11	p<0.05
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	Student	IR/EU Project Head	0.77	0.32	p<0.001
14.a. There are an increased number of students admitted to medical schools to study medicine.	Student	IR/EU Project Head	-0.19	0.40	p<0.01
14.c. Students admitted to study medicine have a first degree in another area.	Student	IR/EU Project Head	0.15	0.27	p<0.05
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	Product	Teacher	0.76	-0.12	p< 0.05
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	Teacher	0.85	-0.21	0
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	Process	Teacher	0.59	-0.15	p<0.01
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.	Process	Teacher	0.52	0.12	p<0.05
19.f. Portfolios are used as a tool to assess students' competence.	Process	Teacher	0.49	-0.12	p<0.05
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	Product	Admin	0.76	-0.29	p< 0.05
21.e. Recent graduates are consulted in curriculum planning.	Process	Other role	0.62	0.15	p<0.05
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	Product	Student	0.85	-0.37	p<0.01
22.d. Staff members can be promoted on the basis of their performance as a teacher.	Process	Student	0.70	-0.25	p<0.01
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.	Process	Student	0.64	-0.14	p<0.05
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.	Process	Student	0.52	0.39	p<0.001
22.c. Professionalism in teaching is acknowledged and rewarded in the school.	Process	Student	0.60	-0.15	p<0.05
19.f. Portfolios are used as a tool to assess students' competence.	Process	Student	0.49	-0.18	p<0.005
14.c. Students admitted to study medicine have a first degree in another area.	Student	Student	0.15	-0.15	p<0.05

The degree of desired change in curriculum trends was higher for respondents in 'other roles' than Heads of institutions in relation to consulting recent graduates in curriculum planning. The desired degree of change in curriculum trends was higher for students than Heads of institutions in relation to programmes being evaluated for efficiency and cost effectiveness, but lower in relation to the following trends: learning outcomes being harmonised across medical schools in Europe; staff being promoted on the basis of teaching performance; curriculum having a planned continuum of learning between undergraduate and postgraduate study; professionalism in teaching being acknowledged and rewarded; portfolios being used to assess student competence; and students admitted to study medicine with a first degree in another area.

The relation between current and future trends is shown in Figure 8.

Trend differences most explained by the investigated categories ($R^2 > 0.25$):

The following trends have the highest R^2 values indicating that the differences in the given answers to these are the most affected ones by the investigated categories (gender, age, region, institutional

role and profession). Where the R^2 values are lower the differences in the answers depend more on noninvestigated differences between the participants of the survey.

Q23: Students admitted to study medicine have a first degree in another area.

Currently R^2: **0.3** and in the future R^2: 0.24

Q25: Selection methods are used that assess a range of abilities and not just academic achievement.

Currently R^2: **0.35** and in the future R^2: 0.19

Q26: Attention is paid to student's health and well being.

Currently R^2: **0.25** and in the future R^2: 0.13

Q38: People are trained as standardised patients and used to complement work with real patients.

Currently R^2: **0.31** and in the future R^2: 0.14

Q57: The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.

Currently R^2: **0.32** and in the future R^2: 0.1

Q65: Staff with training and experience in assessment support the assessment programme in the medical school.

Currently R^2: **0.25** and in the future R^2: 0.17

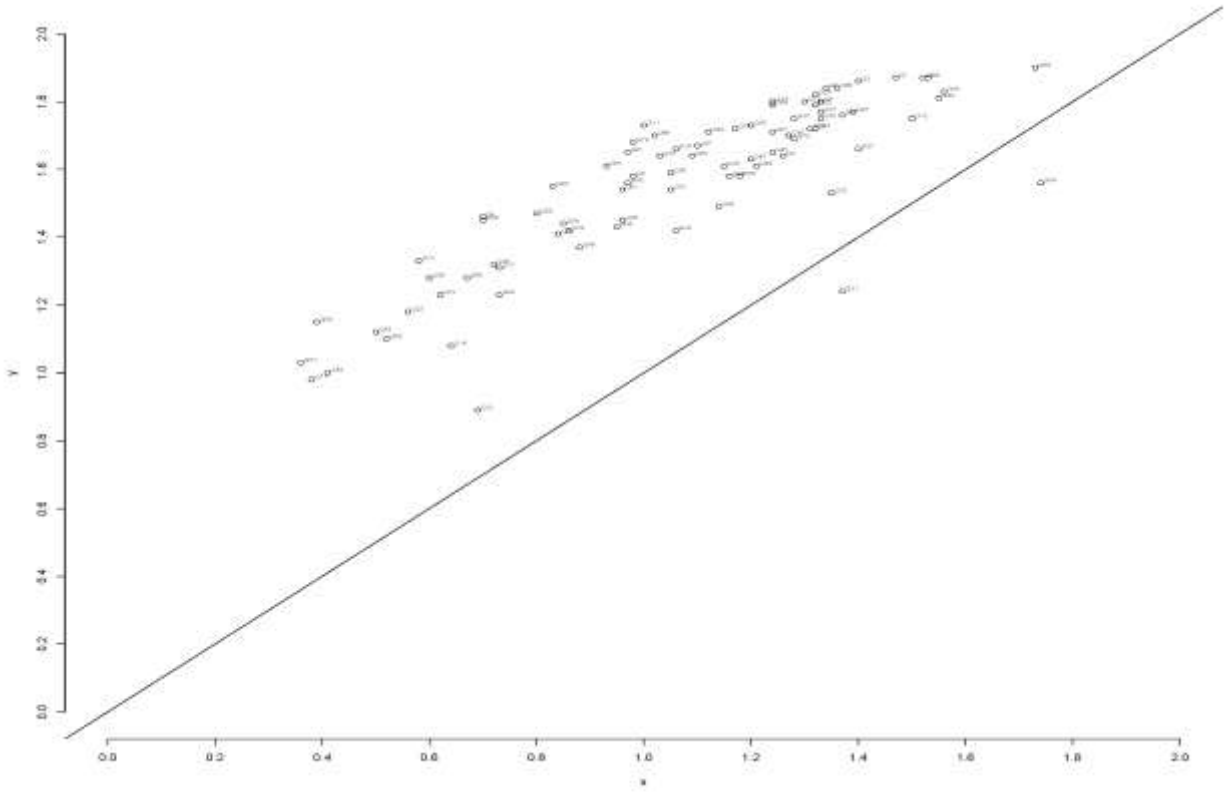
Q70: Students are full members of the curriculum planning committee.

Currently R^2: **0.29** and in the future R^2: 0.13

Q75: One or more staff with specific training and expertise in education support the local education initiative.

Currently R^2: **0.26** and in the future R^2: 0.11

Figure 8: Visual representation of the relation of current and future trends



3.2 Obstacles to Curriculum Change

3.2.1 Profile of Respondents to Obstacles to Change Survey

Of the 1006 people who responded to the survey, 31% were Professors and 69% had other rankings. Thirty-one per cent worked at institutions within the EU, and 69% from across the rest of the world. The sample contained equal proportions of men and women, with 48% of respondents aged 50 years or over, and 48% aged 49 or under. Seventy-one per cent of respondents reported their professional background as being a doctor, 3% a nurse, and 26% 'other'.

Tables A, B and C in Appendix 5 rank the statements by mean score (Table C) and the extent to which all the statements were considered to be either not an obstacle (Table A) or a major obstacle (Table B).

3.2.1.1 Geographic Distribution

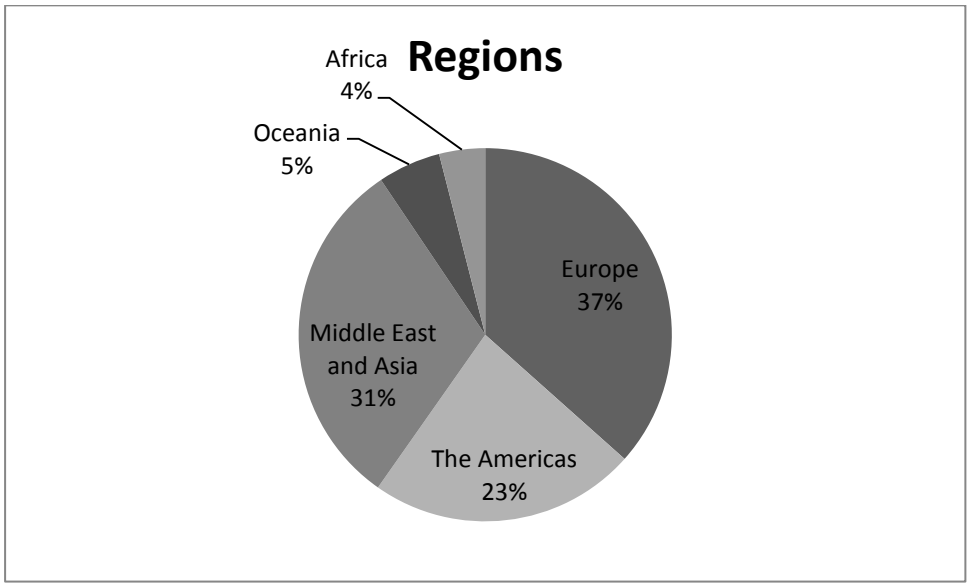
1006 people responded to the survey from 92 countries. Table 41 summarises the geographical distribution of the respondents.

Table 41: Geographical Distribution of Survey Respondents

Country	Number of completed surveys
United States of America	108
United Kingdom	101
Iran	53
Canada	51
Australia, Pakistan	47
Thailand	44
Malaysia	29
Germany	23
The Netherlands	22
Brazil, Indonesia, Portugal	20
Spain	19
India, Switzerland	17
Denmark, South Africa, Sweden, Turkey	16
Saudi Arabia	15
Mexico	14
Italy	13
Egypt	11
Argentina	9
Norway	8
Austria, Belgium, Finland, Iraq, Romania	7
Chile, Japan, Taiwan	6
China, Estonia, New Zealand, Poland, United Arab Emirates	5
Czech Republic, Ireland, Kazakhstan, Lebanon, Singapore, South Korea, Sri Lanka, Sudan, Ukraine,	4
Columbia, Dominica, France, Greece, Latvia, Lithuania, Myanmar, Philippines,	3
Armenia, Hungary, Israel, Macedonia, Mongolia, Peru, Qatar, Serbia, Slovakia, Syria,	2
Angola, Bangladesh, Barbados, Belarus, Bolivia, Brunei, Bulgaria, Georgia, Guyana, Jamaica, Kosovo, Malta, Morocco, Namibia, Nepal, Nigeria, Palestine, Republic of Korea, Russia, S Kitts &Nevis, Tanzania, Tunisia, Uzbekistan, Venezuela, Vietnam, Yemen,	1

Figure 9 summarises the regional distribution of survey respondents.

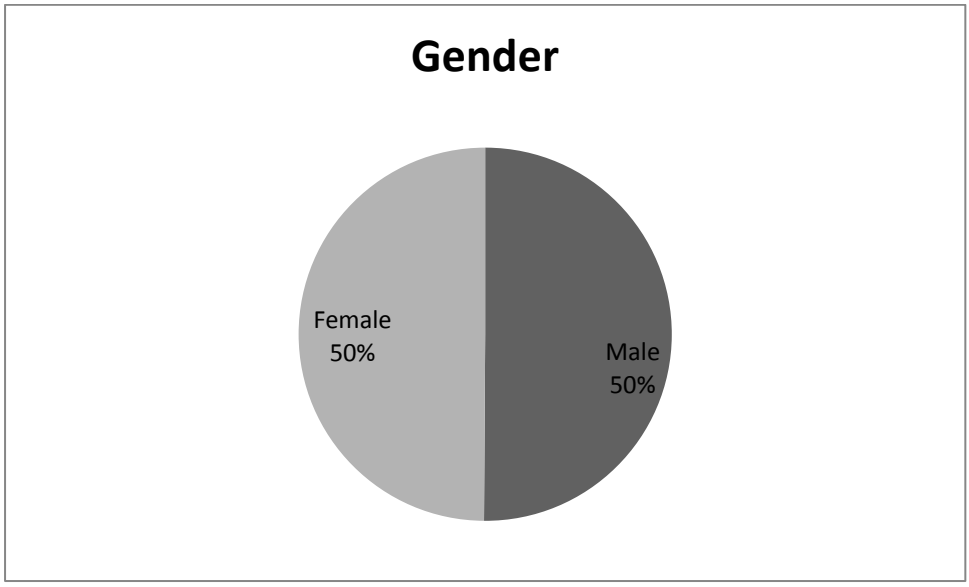
Figure 9: Regional distribution of survey respondents



3.2.1.2 Gender

The sample contained equal proportions of men and women.

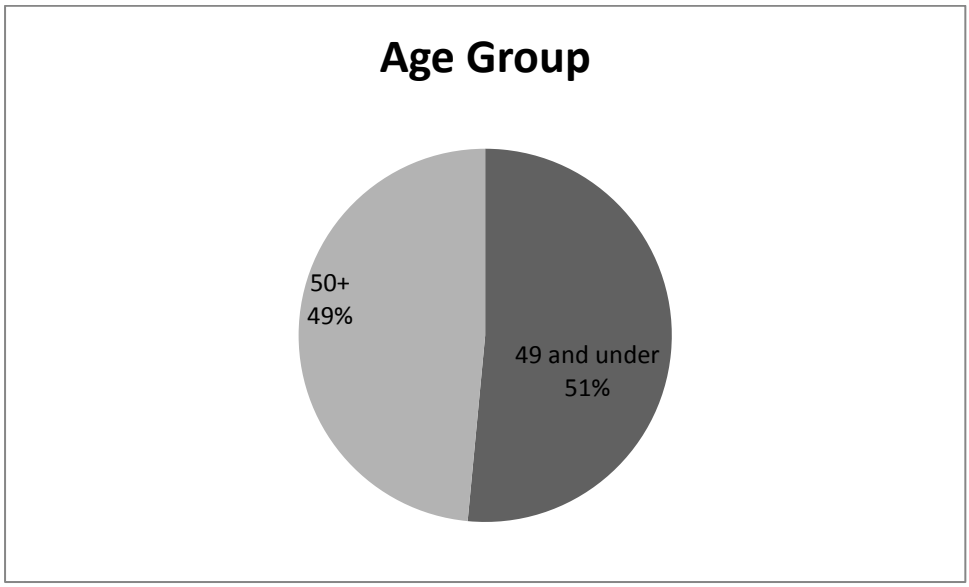
Figure 10: Gender distribution of respondents to obstacles to change survey



3.2.1.3 Age

The survey contained almost an equal number of respondents aged above and below 50 years.

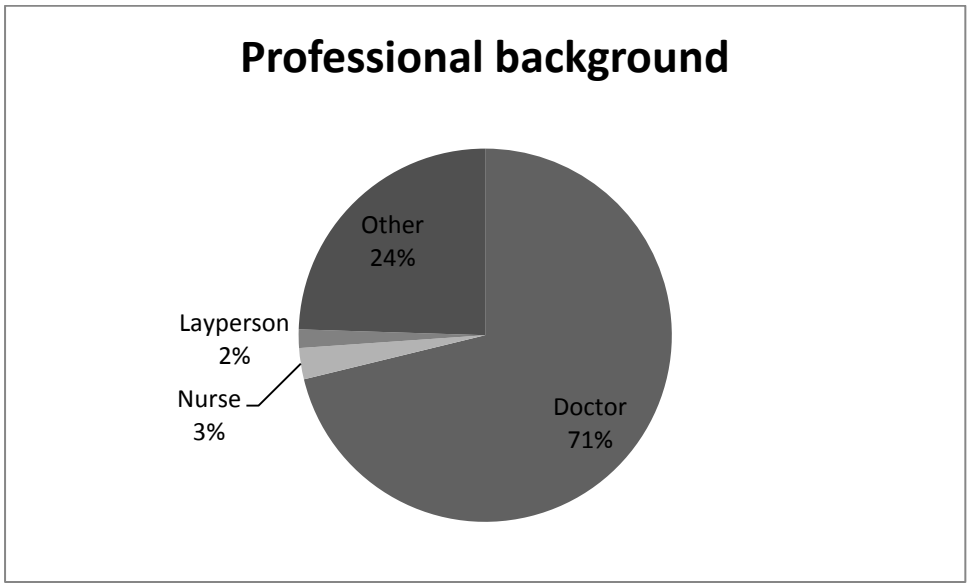
Figure 11: Age of survey respondents



3.2.1.4 Professional Background

Respondents included doctors, nurses, lay persons and a range of others with a commitment to medical education, as summarised in Figure 12.

Figure 12: Professional background of survey respondents



3.2.1.5 Role in Institution

Table 42: Role of respondents in their institution

Role in Organisation	Frequency (%)
Dean, Vice Dean, Head of Undergraduate Studies, Head of Curriculum	184 (19.1%)
Head of Medical Education Unit	114 (11.9%)
Head of International Relations/ Head of EU Project	15 (9%)
Teacher	373 (38.8%)
Administrator	30 (3.1%)
Other	244 (25.4%)

3.2.2 Factors in favour of the status quo

Respondents were asked the extent to which they considered the following factors to be a barrier or obstacle to change:

a) Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised;
b) A conservatism, rigidity and reluctance to change;
c) A bad experience of previous change efforts by members of the institution.
d) A lack of support from students for change in the curriculum.

3.2.2.1 Overview

Table 43 shows the responses to these four areas:

Table 43: *Responses to factors in favour of the status quo*

	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean
13a) Satisfaction or contentment with current approach (n=911)	99 (10%)	254 (25.6%)	270 (27.2%)	227 (22.9%)	141 (14.2%)	3.06
13b) A conservatism, rigidity, reluctance to change (n=993)	80 (8.1%)	205 (20.6%)	239 (24.1%)	225 (22.7%)	244 (24.6%)	3.35
13c) Bad experience of previous change (n=923)	257 (27.8%)	310 (33.6%)	173 (18.7%)	141 (15.3%)	42 (4.6%)	2.35
13d) A lack of support from students for change (n=967)	339 (41.3%)	330 (34.1%)	139 (14.4%)	64 (6.6%)	35 (3.6%)	1.97

The mean scores for questions in this section ranged from 1.97 to 3.35 (1 not an obstacle and 5 a major obstacle). The statement with the least support was 13d (a lack of support from students for change in the curriculum) which 41% of respondents thought was not an obstacle and 34% a minor obstacle to change. The statement with the highest score was 13b (a conservatism, rigidity and reluctance to change), which 25% of respondents considered to be a major obstacle, 23% a considerable and 24% a significant obstacle to change.

3.2.2.2 Variations by Age, Region and Title

Table 44 summarises the responses to the statements within two age groups: respondents aged 49 years and under; and respondents aged 50 years and over:

Table 44: Factors in favour of the status quo by age

	Age group	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
13a) Satisfaction or contentment with current approach (n=959)	≤49	52 (10.5%)	131 (26.5%)	130 (26.3%)	106 (21.4%)	76 (15.4%)	3.05	n/s
	≥50	43 (9.3%)	115 (24.8%)	128 (27.6%)	104 (24.6%)	64 (13.8%)	3.09 (3.07)	
13b) A conservatism, rigidity, reluctance to change (n=961)	≤49	40 (8.1%)	96 (19.5%)	120 (24.3%)	113 (22.9%)	124 (25.2%)	3.38	n/s
	≥50	36 (7.7%)	105 (22.4%)	111 (23.7%)	102 (21.8%)	114 (24.4%)	3.33 (3.35)	
13c) Bad experience of previous change (n=895)	≤49	115 (24.9%)	150 (32.5%)	90 (19.5%)	86 (18.6%)	21 (4.5%)	2.45	p<0.01
	≥50	135 (31.2%)	149 (34.4%)	79 (18.2%)	51 (11.8%)	19 (4.4%)	2.24 (2.35)	
13d) A lack of support from students for change (n=938)	≤49	180 (37.3%)	168 (34.9%)	80 (16.6%)	31 (6.4%)	23 (4.8%)	2.06	p<0.05
	≥50	202 (44.3%)	156 (24.2%)	57 (12.5%)	31 (6.8%)	10 (2.2%)	1.88 (1.98)	

Statistically significant differences in scores were obtained by age for Statements 13c and 13d. Respondents aged 49 or under were less likely to consider a previous bad experience of change efforts or a lack of support from students as not being an obstacles to curriculum change than those respondents aged 50 or over (mean scores of 2.45 and 2.06 versus 2.24 and 1.88 respectively).

Table 45 summarises the responses to the statements within two regions: EU countries and non-EU countries.

Table 45: Factors in favour of the status quo by region

	Region	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
13a) Satisfaction or contentment with current approach (n=954)	EU	27 (9.4%)	90 (31.3%)	77 (26.7%)	66 (22.9%)	28 (9.7%)	2.92	<0.05
	Non-EU	68 (10.2%)	154 (23.1%)	178 (27.6%)	156 (23.4%)	110 (16.5%)	3.13 (3.07)	
13b) A conservatism, rigidity, reluctance to change (n=957)	EU	26 (8.9%)	70 (23.9%)	68 (23.2%)	69 (23.5%)	60 (20.5%)	3.23	<0.05
	Non-EU	48 (7.2%)	128 (19.3%)	162 (24.2%)	148 (22.3%)	178 (26.8%)	3.42 (3.36)	
13c) Bad experience of previous change (n=890)	EU	79 (28.9%)	98 (35.9%)	49 (17.9%)	39 (14.3%)	8 (2.9%)	2.26	n/s
	Non-EU	171 (27.7%)	199 (32.3%)	116 (18.8%)	99 (16.0%)	32 (5.2%)	2.39 (2.35)	
13d) A lack of support from students for change (n=934)	EU	118 (41.4%)	100 (35.1%)	43 (15.1%)	18 (6.3%)	6 (2.1%)	1.93	n/s
	Non-EU	267 (41.1%)	217 (33.4%)	93 (14.3%)	44 (6.8%)	28 (4.3%)	2.00 (1.98)	

Statistically significant differences in scores were obtained by region for questions 13a and 13b. Respondents reporting on EU countries were marginally less likely to consider there to be a satisfaction with the established approach and a conservatism or reluctance to change than respondents from countries outside the EU (mean scores of 2.92 and 3.23 versus 3.13 and 3.42 respectively).

Table 46 summarises the responses to the statements by two groups: professors and non-professors.

Table 46: Factors in favour of the status quo by title

	Title	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
13a) Satisfaction or contentment with current approach (n=952)	Prof	32 (10.8%)	71 (24.1%)	70 (23.7%)	81 (27.5%)	41 (13.9%)	3.09	ns
	Non-prof	64 (9.7%)	168 (25.6%)	187 (28.5%)	139 (21.2%)	99 (15.1%)	3.06 (3.07)	
13b) A conservatism, rigidity, reluctance to change (n=954)	Prof	31 (10.4%)	60 (20.2%)	66 (22.2%)	65 (21.9%)	75 (25.3%)	3.31	ns
	Non-prof	44 (6.7%)	135 (20.5%)	165 (25.1%)	151 (23.0%)	162 (24.7%)	3.38 (3.36)	
13c) Bad experience of previous change (n=890)	Prof	93 (33.2%)	97 (34.6%)	46 (16.4%)	37 (13.2%)	7 (2.5%)	2.17	<0.01
	Non-prof	156 (25.6%)	201 (33.0%)	116 (19.0%)	103 (16.9%)	34 (5.6%)	2.44 (2.36)	
13d) A lack of support from students for change (n=931)	Prof	128 (44.1%)	107 (36.9%)	35 (12.1%)	11 (3.8%)	9 (3.1%)	1.85	<0.05
	Non-prof	253 (49.5%)	213 (33.2%)	101 (15.8%)	49 (7.6%)	25 (3.9%)	2.03 (1.98)	

Statistically significant differences in scores were obtained by title for questions 13c and 13d. Respondents who are professors were less likely to consider a previous bad experience of change efforts or a lack of support from students to be an obstacle to curriculum change than those

respondents who were not professors (mean scores of 2.17 and 1.85 versus 2.44 and 2.03 respectively) .

3.2.3. Problems relating to the proposed change

Respondents were asked the extent to which they considered the following factors to be a barrier or obstacle to change:

a) A lack of information about the proposed new approach;
b) Staff do not have a clear vision of the change;
c) Teachers are not convinced that the change will be an improvement on the current approach;
d) There is a lack of evidence to support the benefits of the proposed change;
e) Teachers do not have sufficient experience and are not trained to implement the new approach
f) The majority of staff do not want change;
g) There are cultural differences that might influence the implementation of the new approach;
h) The change is not in line with national guidelines or recommendations
i) The change is not in line with the accreditation process for the school;
j) It is not possible to evaluate, in the short term, the benefits of the change.

3.2.3.1 Overview

Table 47 shows the responses to these ten areas:

Table 47: Responses to problems relating to the proposed change

	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean
14a) Lack of information about new approach (n=984)	118 (12%)	267 (27.1%)	281 (28.6%)	196 (19.9%)	122 (12.4%)	2.94
14b) Staff no clear vision of change (n=989)	64 (6.5%)	185 (18.7%)	288 (29.1%)	263 (26.6%)	189 (19.1%)	3.33
14c) Teachers not convinced change will bring improvement (n=985)	65 (6.6%)	154 (15.6%)	280 (28.4%)	298 (30.3%)	188 (19.1%)	3.40
14d) Lack of evidence of benefits of change (n=974)	126 (12.9%)	276 (28.3%)	256 (26.3%)	196 (20.1%)	120 (12.3%)	2.91
14e) Teachers not trained to implement new approach (n=983)	55 (5.6%)	188 (19.1%)	276 (28.1%)	232 (23.6%)	232 (23.6%)	3.40
14f) Majority of staff do not want change (n=966)	111 (11.5%)	268 (27.7%)	250 (25.9%)	167 (17.3%)	170 (17.6%)	3.02
14g) Cultural differences might influence implementation (n=947)	270 (28.5%)	292 (30.8%)	200 (21.1%)	127 (13.4%)	58 (6.1%)	2.38
14h) Change not in line with national guidelines (n=955)	504 (52.8%)	206 (21.6%)	106 (11.1%)	77 (8.1%)	62 (6.5%)	1.94
14i) Change not in line with school accreditation process (n=950)	511 (53.8%)	189 (19.9%)	112 (11.8%)	79 (8.3%)	59 (6.2%)	1.93
14j) Benefits cannot be evaluated in short term (n=956)	175 (18.3%)	318 (33.3%)	236 (24.7%)	149 (15.6%)	78 (8.2%)	2.62

The mean scores for questions in this section ranged from 1.93 to 3.40 (1 being not an obstacle and 5 being a major obstacle). The statements with the least support were 14i (the change is not in line with the accreditation process for the school) which 54% of respondents thought was not an obstacle and 20% thought was only a minor obstacle; and 14h (the change is not in line with national guidelines or recommendations which 53% of respondents thought was not an obstacle and 20% consider to be only a minor obstacle. The statements with the most support were 14c (Teachers are

not convinced that the change will be an improvement on the current approach) which 19% considered to be a major obstacle, 30% a considerable obstacle and 28% a significant obstacle; and 14e (teachers do not have sufficient experience and are not trained to implement the new approach) which 24% of respondents considered to be a major obstacle, 24% a considerable obstacle and 28% a significant obstacle.

3.2.3.2 Variations by Age and Region

Table 48 summarises the responses to the statements by two age groups: respondents aged 49 years and under; and respondents aged 50 years and over.

Table 48: Problems relating to the proposed change by Age

	Age group	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
14a) Lack of information about new approach (n=954)	≤49	58 (11.9%)	117 (23.9%)	149 (30.5%)	103 (21.1%)	62 (12.7%)	2.99	n/s
	≥50	57 (12.3%)	143 (30.8%)	127 (27.3%)	89 (19.1%)	49 (10.5%)	2.85 (2.92)	
14b) Staff no clear vision of change (n=958)	≤49	34 (6.9%)	85 (17.2%)	138 (28.0%)	138 (28.0%)	98 (19.9%)	3.37	n/s
	≥50	27 (5.8%)	94 (20.2%)	144 (31.0%)	119 (25.6%)	81 (17.4%)	3.29 (3.33)	
14c) Teachers not convinced change will bring improvement (n=954)	≤49	33 (6.7%)	84 (17.1%)	138 (28.1%)	139 (28.3%)	97 (19.8%)	3.37	n/s
	≥50	29 (6.3%)	66 (14.3%)	133 (28.7%)	153 (33.0%)	82 (17.7%)	3.42 (3.39)	
14d) Lack of evidence of benefits of change (n=945)	≤49	65 (13.4%)	131 (27.0%)	134 (27.6%)	94 (19.4%)	61 (12.6%)	2.91	n/s
	≥50	58 (12.6%)	137 (29.8%)	115 (25.0%)	96 (20.9%)	54 (11.7%)	2.89 (2.90)	
14e) Teachers not trained to implement new approach (n=952)	≤49	26 (5.3%)	91 (18.6%)	147 (30.0%)	106 (21.6%)	120 (24.5%)	3.41	n/s
	≥50	26 (5.6%)	92 (19.9%)	122 (26.4%)	118 (25.5%)	104 (22.5%)	3.39 (3.40)	
14f) Majority of staff do not want change (n=939)	≤49	51 (10.6%)	120 (24.8%)	136 (28.2%)	90 (18.6%)	86 (17.8%)	3.08	n/s
	≥50	56 (12.3%)	138 (30.3%)	109 (23.9%)	71 (15.6%)	82 (18.0%)	2.97 (3.03)	
14g) Cultural differences might influence implementation (n=916)	≤49	125 (26.5%)	145 (30.7%)	105 (22.2%)	69 (14.6%)	28 (5.9%)	2.43	n/s
	≥50	138 (31.1%)	139 (31.3%)	89 (20.0%)	51 (11.5%)	27 (6.1%)	2.30 (2.37)	
14h) Change not in line with national guidelines (n=927)	≤49	234 (49.3%)	108 (22.7%)	59 (12.4%)	45 (9.5%)	29 (6.1%)	2.00	p<0.05
	≥50	258 (57.1%)	89 (19.7%)	43 (9.5%)	29 (6.4%)	33 (7.3%)	1.87 (1.94)	
14i) Change not in line with school accreditation process (n=922)	≤49	236 (50.2%)	97 (20.6%)	62 (13.2%)	45 (9.6%)	30 (6.4%)	2.01	p<0.05
	≥50	264 (58.4%)	83 (18.4%)	48 (10.6%)	30 (6.6%)	27 (6.0%)	1.83 (1.93)	
14j) Benefits cannot be evaluated in short term (n=930)	≤49	88 (18.3%)	157 (32.6%)	125 (26.0%)	74 (15.4%)	37 (7.7%)	2.62	n/s
	≥50	82 (18.3%)	153 (34.1%)	106 (23.6%)	71 (15.8%)	37 (8.2%)	2.62 (2.62)	

Statistically significant differences in scores were obtained by age for Statements 14h and 14i. Respondents aged 50 years and over were marginally more likely to consider that changes not being in line with national guidelines or a schools accreditation process was not an obstacle to change than respondents aged 49 years and under (mean scores of1.87 and 1.83 versus 2.00 and 2.01 respectively).

Table 49 summarises the responses to the statements within two regions: EU countries and non-EU countries.

Table 49: Problems relating to the proposed change by Region

	Region	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
14a) Lack of information about new approach (n=949)	EU	30 (10.6%)	98 (34.5%)	76 (26.8%)	55 (19.4%)	49 (17.1%)	2.81	p<0.05
	Non-EU	84 (12.6%)	161 (24.2%)	194 (29.2%)	135 (20.3%)	133 (19.9%)	2.98 (2.93)	
14b) Staff no clear vision of change (n=953)	EU	15 (5.2%)	58 (20.3%)	91 (31.8%)	73 (25.5%)	98 (19.9%)	3.29	n/s
	Non-EU	45 (6.7%)	122 (18.3%)	187 (28.0%)	180 (27.0%)	81 (17.4%)	3.35 (3.33)	
14c) Teachers not convinced change will bring improvement (n=949)	EU	12 (4.2%)	48 (16.7%)	96 (33.3%)	89 (30.9%)	43 (14.9%)	3.36	n/s
	Non-EU	49 (7.4%)	102 (15.4%)	175 (26.5%)	197 (29.8%)	138 (20.9%)	3.41 (3.40)	
14d) Lack of evidence of benefits of change (n=941)	EU	32 (11.3%)	85 (30.0%)	89 (31.4%)	50 (17.7%)	27 (9.5%)	2.84	n/s
	Non-EU	89 (13.5%)	179 (27.2%)	160 (24.3%)	141 (21.4%)	89 (13.5%)	2.94 (2.91)	
14e) Teachers not trained to implement new approach (n=948)	EU	16 (5.6%)	74 (25.9%)	82 (28.7%)	62 (21.7%)	52 (18.2%)	3.21	p<0.001
	Non-EU	33 (5.0%)	109 (16.5%)	185 (27.9%)	163 (24.6%)	172 (26.0%)	3.50 (3.41)	
14f) Majority of staff do not want change (n=935)	EU	34 (12.0%)	79 (27.8%)	77 (27.1%)	52 (18.3%)	42 (14.8%)	2.96	n/s
	Non-EU	72 (11.1%)	178 (27.3%)	165 (25.3%)	111 (17.1%)	125 (19.2%)	3.06 (3.03)	
14g) Cultural differences might influence implementation (n=911)	EU	95 (34.9%)	87 (32.0%)	55 (20.2%)	27 (9.9%)	8 (2.9%)	2.14	p<0.001
	Non-EU	167 (26.1%)	192 (30.0%)	140 (21.90%)	91 (14.2%)	49 (7.7%)	2.47 (2.37)	
14h) Change not in line with national guidelines (n=921)	EU	160 (58.8%)	54 (19.9%)	23 (8.5%)	18 (6.6%)	17 (6.3%)	1.82	p<0.05
	Non-EU	329 (50.7%)	143 (22.0%)	78 (12.0%)	54 (8.3%)	45 (6.9%)	1.99 (1.94)	
14i) Change not in line with school accreditation process (n=918)	EU	155 (57.6%)	56 (20.8%)	26 (9.7%)	16 (5.9%)	16 (5.9%)	1.82	n/s
	Non-EU	342 (52.7%)	125 (19.3%)	83 (12.8%)	59 (9.1%)	40 (6.2%)	1.97 (1.92)	
14j) Benefits cannot be evaluated in short term (n=924)	EU	57 (20.2%)	113 (40.1%)	67 (23.8%)	29 (10.3%)	16 (5.7%)	2.41	p<0.001
	Non-EU	112 (17.4%)	191 (29.8%)	163 (25.4%)	118 (18.4%)	58 (9.0%)	2.72 (2.62)	

Statistically significant differences in scores were obtained by region for statements 14a, 14e, 14g, 14h and 14j. Respondents in the EU were marginally less likely to see a lack of information about the new approach, teachers not being trained, cultural differences, the change not being in line with national guidelines and an inability to evaluate the benefits in the short term as being an obstacle for

change than respondents in the rest of the world (mean scores of 2.81, 3.21, 2.14, 1.82, 2.41 versus 2.98, 3.50, 2.47, 1.99, 2.72).

3.2.4. Factors Associated with the cost of implementing change

Respondents were asked the extent to which they considered the following factors to be a barrier or obstacle to change:

a) Fewer resources to support new education initiatives are available at a time of financial restraint;
b) The potential benefits of the change are not worth its cost in time and resources required to implement it;
c) Planning the change will increase staff workload;
d) Implementing the change will increase staff workload;
e) The skills needed to implement the change are lacking
f) A staff training programme needs to be delivered.

3.2.4.1 Overview

Table 50 shows the response to these six areas:

Table 50: Responses to factors associated with the cost of implementing the change.

	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean
15a) Fewer resources to support new educational initiatives (n=984)	75 (7.6%)	200 (20.3%)	280 (28.5%)	234 (23.8%)	195 (19.8%)	3.28
15b) Potential benefits not worth the cost of implementation (n=959)	182 (19.0%)	281 (29.3%)	242 (25.2%)	173 (17.2%)	81 (8.4%)	2.68
15c) Planning change will increase staff workload (n=986)	74 (7.5%)	185 (18.8%)	292 (29.6%)	256 (26.0%)	179 (18.2%)	3.28
15d) Implementing change will increase staff workload (n=984)	63 (6.4%)	159 (16.2%)	266 (27.0%)	275 (27.9%)	221 (22.5%)	3.44
15e) Skills to implement change are lacking (n=987)	90 (9.1%)	221 (22.4%)	265 (26.8%)	230 (23.3%)	181 (18.3%)	3.19
15f) Staff training needs to be delivered (n=976)	107 (11.0%)	277 (28.4%)	282 (28.9%)	184 (18.9%)	126 (12.9%)	2.94

The mean scores for questions in this section ranged from 2.68 to 3.44 (1 being not an obstacle and 5 being a major obstacle). The statement with the least support was 15b (the potential benefits of the change are not worth its cost in time and resources required to implement it) which 19% of respondents felt was not an obstacle and 29% a minor obstacle. The statement in this section with the most support was 15d (implementing the change will increase staff workload) which 23% of respondents considered to be a major obstacle, 28% a considerable obstacle and 27% a significant obstacle.

The statements were analysed by gender, age, region and title to see if the responses obtained were statistically significant using the Mann-Whitney U-test.

No significant difference in the scores for gender or title for any of the statements.

3.2.4.2 Variations by Age and Region

Table 51 summarises the responses to the statements by two age groups: respondents aged 49 years and under; and respondents aged 50 years and over.

Table 51: Factors relating to the cost of implementing the change by Age

	Age group	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
15a) Fewer resources to support new educational initiatives (n=953)	≤49	32 (6.5%)	107 (21.9%)	140 (28.6%)	120 (24.5%)	90 (18.4%)	3.26	n/s
	≥50	38 (8.2%)	84 (18.1%)	132 (28.4%)	108 (23.3%)	102 (22.0%)	3.33 (3.29)	
15b) Potential benefits not worth the cost of implementation (n=928)	≤49	82 (17.3%)	138 (29.2%)	126 (26.6%)	90 (19.0%)	37 (7.8%)	2.71	n/s
	≥50	89 (19.6%)	133 (29.2%	112 (24.6%)	79 (17.4%)	42 (9.2%)	2.67 (2.69)	
15c) Planning change will increase staff workload (n=957)	≤49	36 (7.3%)	92 (18.6%)	142 (28.7%)	135 (27.3%)	89 (18.0%)	3.30	n/s
	≥50	36 (7.8%)	85 (18.4%)	144 (31.1%)	117 (25.3%)	81 (17.5%0	3.26 (3.28)	
15d) Implementing change will increase staff workload (n=954)	≤49	31 (6.3%)	78 (15.9%)	133 (27.0%)	132 (26.8%)	118 (24.0%)	3.46	n/s
	≥50	29 (6.3%)	74 (16.0%)	126 (27.3%)	139 (30.1%)	94 (20.3%)	3.42 (3.44)	
15e) Skills to implement change are lacking (n=956)	≤49	45 (9.2%)	115 (23.5%)	124 (25.3%)	121 (24.7%)	85 (17.3%)	3.18	n/s
	≥50	41 (8.8%)	100 (21.5%)	136 (29.2%)	99 (21.2%)	90 (19.3%)	3.21 (3.19)	
15f) Staff training needs to be delivered (n=945)	≤49	52 (10.8)	127 (26.3%)	130 (26.9%)	105 (21.7%)	69 (14.3%)	3.02	p<0.05
	≥50	51 (11.0%)	145 (31.4%)	144 (31.2%)	72 (15.6%)	50 (10.8%)	2.84 (2.93)	

Statistically significant differences in scores were obtained by age for Statement 15f. Respondents aged 49 years and under were marginally more likely to consider the need for a staff training programme to be an obstacle to change that respondents aged 50 and over (mean scores of 3.02 versus 2.84).

Table 52 summarises the responses to the statements within two regions: EU countries and non-EU countries.

Table 52: Factors relating to the cost of implementing the change by Region

	Region	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
15a) Fewer resources to support new educational initiatives (n=949)	EU	20 (7.0%)	40 (14.0%)	85 (29.8%)	82 (28.8%)	58 (20.4%)	3.41	p<0.05
	Non-EU	49 (7.4%)	148 (22.3%)	189 (28.5%)	144 (21.7%)	134 (20.2%)	3.25 (3.30)	
15b) Potential benefits not worth the cost of implementation (n=924)	EU	46 (16.7%)	84 (30.5%)	78 (28.4%)	45 (16.4%)	22 (8.0%)	2.68	n/s
	Non-EU	125 (19.3%)	189 (29.1%)	156 (24.0%)	121 (18.6%)	58 (8.9%)	2.69 (2.69)	
15c) Planning change will increase staff workload (n=951)	EU	17 (5.9%)	54 (18.8%)	94 (32.6%)	80 (27.8%)	43 (14.9%)	3.27	n/s
	Non-EU	52 (7.8%0	123 (18.6%)	192 (29.0%)	168 (25.3%)	128 (19.3%)	3.30 (3.29)	
15d) Implementing change will increase staff workload (n=948)	EU	13 (4.6%)	42 (14.7%)	77 (27.0%)	88 (30.9%)	65 (22.8%)	3.53	n/s
	Non-EU	44 (6.6%)	111 (16.7%)	183 (27.6%)	176 (26.5%)	149 (22.5%)	3.41 (3.45)	
15e) Skills to implement change are lacking (n=951)	EU	31 (10.8%)	79 (27.5%)	72 (25.1%)	67 (23.3%)	38 (13.2%)	3.01	p<0.01
	Non-EU	54 (8.1%)	137 (20.6%)	183 (27.6%)	153 (23.0%)	137 (20.6%)	3.27 (3.19)	
15f) Staff training needs to be delivered (n=942)	EU	32 (11.3%)	89 (31.3%)	88 (31.0%)	45 (15.8%)	30 (10.6%)	2.83	n/s
	Non-EU	70 (10.6%)	182 (27.7%)	184 (28.0%)	133 (20.2%)	89 (13.5%)	2.98 (2.94)	

Statistically significant differences were obtained by region for statements 15a and 15e. Respondents from EU countries were marginally more likely to see resource constraints at a time of fiscal restraint as an obstacle to change than respondents from non-EU countries (mean scores of 3.41 versus 3.25). Respondents from EU countries were marginally less likely to see the lack of skills needed to implement change as being an obstacle than respondents from non EU-countries (mean scores of 3.01 versus 3.27).

3.2.5. Factors associated with the process of change

Respondents were asked the extent to which they considered the following factors to be a barrier or obstacle to change:

a) An appropriate decision-making process to agree and implement change is lacking;
b) Consultation with the range of stakeholders (including university and health service staff) is lacking;
c) There is a lack of support for change from the University
d) There is a lack of support by the dean or senior decision-makers in the medical school;
e) The extent of the change from the existing curriculum is too great;
f) Commitment by staff to their teaching responsibilities is lacking. Staff do not have a sense of personal responsibility for improving education;
g) The teacher's work in the field is not incentivised, valued or rewarded;
h) There are conflicting interests for the teacher between research and/or clinical care;
i) The process of change in the institution is too bureaucratic.

3.2.5.1 Overview

Table 53 shows the responses to these nine areas:

Table 53: Responses to factors associated with the process of change

	Not an obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean
16a) lack of appropriate decision-making process (n=978)	197 (20.1%)	221 (22.6%)	257 (26.3%)	165 (16.9%)	138 (14.1%)	2.82
16b) Lack of consultation with stakeholders (n=972)	187 (19.2%)	273 (28.1%)	233 (24.0%)	164 (16.9%)	115 (11.8%)	2.74
16c) Lack of University support for change (n=959)	314 (32.7%)	242 (25.2%)	156 (16.3%)	122 (12.7%)	125 (13.0%)	2.48
16d) Lack of support by dean or senior decision-makers (n=962)	387 (40.2%)	198 (20.6%)	124 (23.9%)	105 (10.9%)	148 (15.4%)	2.41
16e) Extent of change from existing curriculum too great (n=972)	161 (16.6%)	282 (29.0%)	274 (28.2%)	166 (17.1%)	89 (9.2%)	2.73
16f) Lack of staff commitment to teaching responsibilities (n=975)	155 (15.9%)	206 (21.1%)	240 (24.6%)	179 (18.4%)	195 (20.0%)	3.05
16g) Teacher's work is not incentivised or rewarded (n=975)	65 (6.7%)	153 (15.7%)	251 (25.7%)	208 (21.3%)	298 (30.6%)	3.53
16h) Teacher's conflicting interests research/clinical care (n=969)	76 (7.8%)	151 (15.6%)	230 (23.7%)	205 (21.2%)	307 (31.7%)	3.53
16i) The process of change too bureaucratic (n=969)	108 (11.1%)	280 (28.9%)	233 (24.0%)	174 (18.0%)	174 (18.0%)	3.03

The mean scores for questions in this section ranged from 2.41 to 3.53. The statement with the least support was 16d (There is a lack of support by the dean or senior decision-makers in the medical school) which 40% of respondents felt was not an obstacle and 21 % a minor obstacle. The statements in this section with the most support were 16g and 16h. Thirty-one per cent of respondents felt that the teacher's work not being incentivised valued or rewarded to be a major obstacle to change; 21% a considerable obstacle and 26% a significant obstacle. Thirty-two per cent of respondents felt that the conflicting interests for a teacher between research and/or clinical work were a major obstacle to change, 21% a considerable obstacle and 24% a significant obstacle.

The statements were analysed by gender, age, region and title to see if the responses obtained were statistically significant using the Mann-Whitney U-test.

No significant difference in the scores for gender for any of the statements.

3.2.5.2 Variations by Age, Region and Title

Table 54 summarises the responses to the statements by two age groups: respondents aged 49 years and under; and respondents aged 50 years and over.

Table 54: Factors associated with the process of change by Age

	Age Group	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
16a) lack of appropriate decision-making process (n=947)	≤49	88 (18.0%)	107 (21.9%)	142 (29.1%)	81 (16.6%)	70 (40.3%)	2.87	n/s
	≥50	105 (22.9%)	105 (22.9%)	104 (22.7%)	82 (17.9%)	63 (13.7%)	2.77 (2.82)	
16b) Lack of consultation with stakeholders (n=943)	≤49	75 (15.6%)	146 (30.3%)	121 (25.1%)	88 (18.3%)	52 (10.8%)	2.78	n/s
	≥50	108 (23.4%)	116 (25.2%)	104 (22.6%)	71 (15.4%)	62 (13.4%)	2.70 (2.74)	
16c) Lack of University support for change (n=932)	≤49	149 (31.2%)	111 (23.2%)	85 (17.8%)	65 (13.6%)	68 (14.2%)	2.56	n/s
	≥50	157 (34.6%)	124 (27.3%)	67 (14.8%)	52 (11.5%)	54 (11.9%)	2.39 (2.48)	
16d) Lack of support by dean or senior decision-makers (n=933)	≤49	171 (35.7%)	96 (20%)	76 (15.9%)	55 (11.5%)	81 (16.9%)	2.54	p<0.01
	≥50	204 (44.9%)	95 (20.9%)	45 (9.9%)	46 (10.1%)	64 (14.1%)	2.28 (2.41)	
16e) Extent of change from existing curriculum too great (n=941)	≤49	78 (16.1%)	135 (28.0%)	139 (28.8%)	84 (17.4%)	47 (9.7%)	2.77	n/s
	≥50	79 (17.2%)	138 (30.1%)	129 (28.2%)	74 (16.2%)	38 (8.3%)	2.68 (2.72)	
16f) Lack of staff commitment to teaching responsibilities (n=944)	≤49	62 (12.7%)	94 (19.3%)	122 (25.1%)	94 (19.3%)	115 (23.6%)	3.22	p<0.001
	≥50	90 (19.7%)	107 (23.4%)	110 (24.1%)	79 (17.3%)	71 (15.5%)	2.86 (3.04)	
16g) Teacher's work is not incentivised or rewarded (n=944)	≤49	38 (7.8%)	71 (14.6%)	123 (25.3%)	100 (20.6%)	154 (31.7%)	3.54	n/s
	≥50	25 (5.5%)	79 (17.2%)	120 (26.2%)	104 (22.7%)	130 (28.4%)	3.51 (3.53)	
16h) Teacher's conflicting interests research/clinical care (n=940)	≤49	46 (9.5%)	80 (16.5%)	96 (19.8%)	105 (21.6%)	159 (32.7%)	3.52	n/s
	≥50	29 (6.4%)	65 (14.3%)	128 (28.2%)	96 (21.1%)	136 (30.0%)	3.54 (3.53)	
16i) The process of change too bureaucratic (n=938)	≤49	44 (9.2%)	136 (28.3%)	122 (25.4%)	93 (19.4%)	85 (17.7%)	3.08	n/s
	≥50	61 (13.3%)	137 (29.9%)	104 (22.7%)	75 (16.4%)	81 (17.7%)	2.95 (3.02)	

Statistically significant differences in scores were obtained by age for Statement 16d and 16f. Respondents aged 49 years or under were more likely to consider a lack of support from the dean or senior decision makers and a lack of commitment by staff to their teaching responsibilities as being an obstacle to change than respondents aged 50 and over (mean scores of 2.54 and 3.22 versus 2.28 and 2.86 respectively).

Table 55 summarises the responses to the statements within two regions: EU countries and non-EU countries.

Table 55: Factors associated with the process of change by Region

	Region	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
16a) Lack of appropriate decision-making process (n=942)	EU	59 (21.0%)	69 (24.6%)	76 (27.0%)	50 (17.8%)	27 (9.6%)	2.70	n/s
	Non-EU	135 (20.4%)	143 (21.6%)	166 (25.1%)	112 (16.9%)	105 (15.9%)	2.86 (2.82)	
16b) Lack of consultation with stakeholders (n=937)	EU	62 (22.1%)	76 (27.1%)	68 (24.3%)	46 (16.4%)	28 (10.0%)	2.65	n/s
	Non-EU	119 (18.1%)	185 (28.2%)	156 (23.7%)	113 (17.2%)	84 (12.8%)	2.78 (2.74)	
16c) Lack of University support for change (n=925)	EU	103 (37.9%)	68 (25.0%)	34 (12.5%)	38 (14.0%)	29 (10.7%)	2.35	p<0.05
	Non-EU	199 (30.5%)	167 (25.6%)	115 (17.6%)	78 (11.9%)	94 (14.4%)	2.54 (2.48)	
16d) Lack of support by dean or senior decision-makers (n=927)	EU	110 (40.6%)	60 (22.1%)	28 (10.3%)	37 (13.7%)	36 (13.3%)	2.37	n/s
	Non-EU	263 (40.1%)	128 (19.5%)	91 (13.9%)	64 (9.8%)	110 (16.8%)	2.44 (2.42)	
16e) Extent of change from existing curriculum too great (n=936)	EU	59 (21.0%)	88 (31.3%)	75 (26.7%)	35 (12.5%)	24 (8.5%)	2.56	p<0.01
	Non-EU	97 (14.8%)	184 (28.1%)	189 (28.9%)	124 (18.9%)	61 (9.3%)	2.80 (2.73)	
16f) Lack of staff commitment to teaching responsibilities (n=940)	EU	44 (15.4%)	70 (24.6%)	80 (28.1%)	39 (13.7%)	52 (18.2%)	2.95	n/s
	Non-EU	106 (16.2%)	126 (19.2%)	152 (23.2%)	135 (20.6%)	136 (20.8%)	3.11 (3.06)	
16g) Teacher's work is not incentivised or rewarded (n=939)	EU	18 (6.4%)	39 (13.8%)	76 (27.0%)	59 (20.9%)	90 (31.9%)	3.58	n/s
	Non-EU	44 (6.7%)	107 (16.3%)	167 (25.4%)	142 (21.6%)	197 (30.0%)	3.52 (3.54)	
16h) Teacher's conflicting interests research/clinical care (n=935)	EU	14 (5.0%)	32 (11.5%)	62 (22.3%)	56 (20.1%)	114 (41.0%)	3.81	p<0.001
	Non-EU	59 (9.0%)	111 (16.9%)	159 (24.2%)	144 (21.9%)	184 (28.0%)	3.43 (3.54)	
16i) The process of change too bureaucratic (n=933)	EU	19 (6.8%)	82 (29.3%)	85 (30.4%)	56 (20.0%)	38 (13.6%)	3.04	n/s
	Non-EU	85 (13.0%)	189 (28.9%)	142 (21.7%)	108 (16.5%)	129 (19.8%)	3.01 (3.02)	

Statistically significant differences in scores were obtained by region for statements 16c, 16e and 16h. Respondents from EU countries were less likely to see a lack of support from the University or the extent of curriculum change being too great as a barrier to change than respondents from non-EU countries (mean scores of 2.35 and 2.56 versus 2.54 and 2.80 respectively). Respondents from EU countries were more likely to see the conflicting interests for teachers or research and/or clinical care as being an obstacle to change (mean scores of 3.81 versus 3.43).

Table 56 summarises the responses to the statements by two groups: professors and non-professors.

Table 56: Factors associated with the process of change by Title

	Title	Not an Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Mean	Sig.
16a) Lack of appropriate decision-making process (n=941)	Prof	68 (23.2%)	78 (26.6%)	62 (21.2%)	43 (14.7%)	42 (14.3%)	2.70	n/s
	Non-prof	127 (19.6%)	135 (20.8%)	180 (27.8%)	117 (18.1%)	89 (13.7%)	2.85 (2.81)	
16b) Lack of consultation with stakeholders (n=937)	Prof	62 (21.1%)	79 (26.9%)	76 (25.9%)	46 (15.6%)	31 (10.5%)	2.68	n/s
	Non-prof	121 (18.8%)	180 (28.0%)	152 (23.6%)	111 (17.3%)	79 (12.3%)	2.76 (2.74)	
16c) Lack of University support for change (n=925)	Prof	105 (36.0%)	81 (27.7%)	34 (11.6%)	35 (12.0%)	37 (12.7%)	2.38	n/s
	Non-prof	199 (31.4%)	150 (23.7%)	118 (18.6%)	81 (12.8%)	85 (13.4%)	2.53 (2.48)	
16d) Lack of support by dean or senior decision-makers (n=927)	Prof	136 (47.4%)	56 (19.5%)	22 (7.7%)	31 (10.8%)	42 (14.6%)	2.26	p<0.05
	Non-prof	239 (37.3%)	134 (20.9%)	95 (14.8%)	70 (10.9%)	102 (15.9%)	2.47 (2.41)	
16e) Extent of change from existing curriculum too great (n=935)	Prof	48 (16.3%)	91 (31.0%)	88 (29.9%)	48 (16.3%)	19 (6.5%)	2.66	n/s
	Non-prof	108 (16.8%)	182 (28.4%)	177 (27.6%)	109 (17.0%)	65 (10.1%)	2.75 (2.72)	
16f) Lack of staff commitment to teaching responsibilities (n=938)	Prof	43 (14.6%)	76 (25.9%)	65 (22.1%)	51 (17.3%)	59 (20.1%)	3.02	n/s
	Non-prof	108 (16.8%)	118 (18.3%)	170 (26.4%)	121 (18.8%)	127 (19.7%)	3.06 (3.05)	
16g) Teacher's work is not incentivised or rewarded (n=938)	Prof	27 (9.2%)	51 (17.3%)	66 (22.4%)	62 (21.0%)	89 (30.2%)	3.46	n/s
	Non-prof	35 (5.4%)	95 (14.8%)	178 (27.7%)	140 (21.8%)	195 (30.3%)	3.57 (3.53)	
16h) Teacher's conflicting interests research/clinical care (n=934)	Prof	21 (7.1%)	48 (16.2%)	74 (25.0%)	60 (20.3%)	93 (31.4%)	3.53	n/s
	Non-prof	53 (8.3%)	94 (14.7%)	148 (23.2%)	141 (22.1%)	202 (31.7%)	3.54 (3.54)	
16i) The process of change too bureaucratic (n=933)	Prof	48 (16.3%)	98 (33.3%)	60 (20.4%)	41 (13.9%)	47 (16.0%)	2.80	p<0.001
	Non-prof	57 (8.9%)	173 (27.1%)	166 (26.0%)	124 (19.4%)	119 (18.6%)	3.12 (3.02	

Statistically significant differences in scores were obtained by title for statements 16d and 16i. Respondents who were Professors were less likely to consider a lack of support from the dean or senior decision-makers or the bureaucratic process as being obstacles to change than respondents who were not professors (mean scores of2.26 and 2.80 versus 2.47 and 3.12 respectively) .

3.2.6. Open Responses

The survey contained two open-response sections that invited respondents to add their experiences of other obstacles to curriculum change and more general comments about the survey. These sections were completed by 399 of the 1006 respondents. A thematic analysis of these responses was conducted, using as a framework the same four areas as were used in the closed response section of the survey: status quo; proposed change; cost and process. Whilst some of the same issues as in the closed-questions were highlighted, this analysis added additional insight into how they had been experienced by the respondents. In addition, new issues were also raised that had not been highlighted in the survey. These will be summarised below.

3.2.6.1 Factors in favour of the status quo

Table 57 summarises the responses given which relate to factors in support of the Status Quo.

Table 57: Factors relating to the status quo

Status Quo - Theme	Number of responses
Vested Interests/Power	27
Conservatism and reluctance to change (13b)	21
Satisfaction with current provision (13a)	13
Business Interests/Service requirements	9
Governance	9
Risk to reputation	5
Lack of student support (13d)	5
Previous bad experience (13c)	2
Total	*91*

The main issue identified by respondents as a factor in favour of the status quo was the existing power structures and vested interests within their organisations (n=27). In particular several responses highlighted the perception that those in senior positions within departments had a vested interest in maintaining the status quo in order to maintain their position. A more general culture of conservatism within their institutions was also highlighted (n=21), with some respondents arguing that change is not always for the good, and others the tendency of organisations to be risk-averse in order to protect their reputation or business (n=5). Related to this, 9 responses highlighted issues concerning to the governance or structure of their institutions as disincentives to change. Thirteen responses suggested that there was a satisfaction with the current provision within their organisation, whilst 9 highlighted that the institutions core concern with business interests or service requirements acted to maintain the status quo. Five responses suggested that there was a lack of student support for curriculum change, for example that students preferred teacher-led curriculum. Finally two respondents suggested that a previous bad experience of the curriculum change process served as an obstacle to future change.

3.2.6.2Problems relating to the proposed change

Table 58 summarise the given responses relating to problems of the proposed change.

Table 58: Problems relating to the proposed change

Proposed Change - Theme	Number of responses
Benefit of change not established (14c; 14d; 14j)	20
Insufficient teacher skills/experience (14e)	17
Too much change	12
Lack of theoretical understanding	7
Lack of information (14a, 14b)	2
Cultural differences	5
Staff don't want change (14f)	3
Total	*66*

The majority of responses relating to this aspect concerned the lack of available evidence to demonstrate the benefits that would be gained from the curriculum change (n=20). Responses also indicated a perceived lack of appropriate skills amongst staff, including technological and language skills to make the proposed change feasible (n=17). Related to this was the perception from some respondents that there was a lack of theoretical understanding about what the proposed change

would bring, as well and a lack of understanding about how that theory could be put into practice (n=7). This also links to the issues highlighted in the closed response section of the survey, that staff did not have a clear vision or enough information about the proposed approach (n=5).

A further issue raised within the open responses related to the amount of change taking place generally within their organisations. There was a sense of 'change fatigue' from some respondents, that there is insufficient time to see the benefits of change before a new change is taking place, or that there are competing visions and sources of change occurring at the same time (n=12). Finally some responses suggested that cultural differences may affect implementation (n=5) or simply that staff didn't want the change (n=3).

3.2.6.3 Factors associated with the cost of implementing change

Table 59 summarises the given responses relating to the cost of implementing the change.

Table 59: Factors associated with the cost of implementing the change

Cost of implementing change - Theme	**Number of responses**
Lack of resources	64
Lack of skills required to implement (15e)	7
Increased workload of implementation (15d)	6
Capacity	6
Fewer resources in time of financial restraint (15a)	5
Increased workload of planning change (15c)	4
Staff training required (15f)	3
Total	*95*

By far the largest obstacle given within the open response section of the survey concerned the lack of resources available within institutions to make change. Respondents reported a lack of finance, staff shortages and the unavailability of sufficient time to implement curriculum change (n=64). Some respondents also highlighted the issue of capacity, relating to the drive to increase student numbers whilst simultaneously reducing the number of staff and resources (n=6). Other responses reflected issues rained in the survey: that the skills required to implement the change were lacking (n=7); there were fewer resources to support new educational initiatives in a time of financial restraint (n=5); the increased workload associated with planning (n=4) and implementing (n=6) the change; and the need for staff training to be delivered (n=3).

3.2.6.4 Factors associated with the process of change

Table 60 summarises the given responses relating to the process of change.

Table 60: Factors associated with the process of change

Process of change - Themes	**Number of responses**
Conflicting interests/Lack of commitment to teaching (16h, 16f)	35
Infrastructure/ logistics	32
Lack of incentives for teaching (16g)	31
Politics/Policy (16c, 16d)	27
Lack of co-ordination/ Professional differences	21
Lack of expertise in medical education	16
Lack of leadership	12
Top-down implementation (16i)	11
Lack of consultation with stakeholders (16b)	9
Generational divide	8
Short-termism	3
Lack of appropriate decision-making process (16a)	2
Poor communication	2
Total	*209*

The vast majority of obstacles to change highlighted by respondents related to problem they had encountered in the process of change. The most common responses concerned the range of conflicting interests that doctors have between clinical provision, research and private practice, which some felt resulted in a lack of commitment to teaching and investment in curriculum change (n=35). This issue was also raised in relation to the lack of incentives or rewards for teaching that some respondents felt reduced the motivation for focusing time on teaching or participating in curriculum change (n=31).

Several respondents highlighted the logistical or infrastructure difficulties they had encountered in trying to implement change (n=32). For some this related to the physical dispersal of campuses, whilst for others it was connected to curriculum alignment. This latter aspect related to situations where the organisation of curriculum and assessment were conducted by different institutions or authorities, for example the centralisation of all medical examinations in one country. This had a consequent impact of the ability to implement change at a local level within an institution. Several respondents also highlighted obstacles to change relating to the political or policy environment (n=27). For some this was the absence of appropriate laws to compel action or the existence of restrictive institutional regulations. Others highlighted resistance from specialist societies to planned changes and others the lack of support from senior decision-makers in their organisation.

A further problem encountered in the process of implementing change related to the lack of co-ordination or co-operation both within and between organisations (n=21). One of the key difficulties experienced here appears to be professional differences. Several respondents reported the gap between medical education professionals and clinicians. Some felt that there was a resistance to input from non-clinicians in medical teaching and reluctance to give non-clinicians senior posts. Others draw attention to the lack of co-operation between clinicians and basic science teachers. Such differences were also reported to result in a lack of trust. Related to this some respondents felt that the implementation of change was hindered by a lack of expertise, particularly in medical education amongst senior staff (n=16) whilst others highlighted the lack of leadership skills (n=12).

Some respondents highlighted the approach to implementation as problematic. This was particularly related to what was felt to be a top-down implementation or one that was too prescriptive or bureaucratic (n=11). Some felt that relevant stakeholders in the process had not been consulted with, and that those who were responsible for delivery were often not included (n=9). Some highlighted the absence of an appropriate decision-making structure, some poor communication and others the increasing short-termism of initiatives, with funding ending before change occurs, contract staff and changing personnel.

One theme that links many of the issues raised is a generational divide (n=8). Some level of discord is apparent between younger and older members of staff, with some younger staff complaining that those in senior positions do not have sufficient recent teaching experience or expertise, whilst some older staff criticise the involvement of younger staff who they feel do not have sufficient experience. Although age was not explicitly mentioned as a problem by many, it can be felt as an undercurrent to some of the other problems that have been raised.

3.2.6.4 No problem

Six respondents felt that the process of curriculum change had not been problematic in their organisation. For most of these, this stemmed from the fact that theirs was a relatively new

institution and as such many of the structural and cultural organisational barriers had not been encountered.

3.2.7 Summary

The results of this survey have highlighted the range of obstacles that have been experienced to the development of curriculum change within medical schools. In the main part of the survey:

- In relation to factors relating to the status quo survey respondents highlighted firstly a culture of conservatism, and secondly a satisfaction with the current approach in medical schools. Both of these factors were found to be more of an issue in non-EU than EU countries.
- In relation to factors relating to the proposed change survey respondents highlighted firstly that they felt that teachers were not convinced that curriculum change would bring an improvement, and secondly that teachers were not trained to implement the new approach. This second factor was found to be more of an issue in EU than non-EU countries.
- In relation to factors relating to the cost of the proposed changed survey respondents highlighted firstly the increased workload of implementing the change, secondly, the increased workload of planning the change, and thirdly that there were fewer resources to support educational initiatives in times of financial constraint. This final factor was found to be more of a concern in EU than non-EU countries.
- In relation to factors associated with the process of change, survey respondents highlighted firstly that teachers' work is not incentivised or rewarded and secondly teachers' conflicting interests of research and clinical care. This later issue was found to be more of an issue in EU than non EU countries.

As this is an EU funded research programme, a comparison of the top mean scores for EU versus non-EU countries is summarised in Table 61 below.

Table 61: Obstacles to change: Comparison of EU and non-EU top mean scores

Factor	EU	Non-EU
Status quo	13b A conservatism, rigidity and reluctance to change **3.23**	13b A conservatism, rigidity and reluctance to change **3.42**
	13aSatisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised **2.92**	13a Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised **3.13**
Proposed change	14cTeachers are not convinced that the change will be an improvement on the current approach **3.36**	14e Teachers do not have sufficient experience and are not trained to implement the new approach **3.50**
	14b Staff do not have a clear vision of the change **3.29**	14cTeachers are not convinced that the change will be an improvement on the current approach **3.41**
Cost of change	15d Implementing the change will increase staff workload **3.53**	15d Implementing the change will increase staff workload **3.41**
	15a Fewer resources to support new education initiatives are available at a time of financial restraint **3.41**	15c Planning the change will increase staff workload **3.30**
Process of change	16h There are conflicting interests for the teacher between research and/or clinical care **3.81**	16g The teacher's work in the field is not incentivised, valued or rewarded **3.52**
	16g The teacher's work in the field is not incentivised, valued or rewarded **3.58**	16h There are conflicting interests for the teacher between research and/or clinical care **3.43**

The main obstacles to curriculum change as highlighted in the open response survey questions were:

- A lack of resources (money, staff, time)
- Teachers' conflict of interest with research/clinical care
- Infrastructure/logistics
- The lack of incentives and rewards for teaching
- Politics/Policy.

4. Curriculum Trends and the Bologna dimensions

Other research conducted as part of MEDINE2 (Work Package 6) has concerned the implementation of the ten dimensions of the Bologna process within European medical schools. The Bologna process refers to the work undertaken by 47 EU countries to promote harmonisation in higher education in Europe. The process began with the signing of the Bologna Declaration in 1999 by the Ministers of Education from 29 EU countries. This declaration and a number of subsequent communiques led to the establishment of ten dimensions or priority areas for action:

- Lifelong learning
- Employability
- Education, Research and Innovation
- Student-Centred Learning and the Teaching Mission in Higher Education
- Readable and Comparable Degrees
- Mobility
- International Openness
- Social Dimension, Equitable Access and Completion
- Three-cycle Model
- Quality Assurance.

4.1 Relationship between the curriculum trends and the Bologna dimensions

As both Work Packages 5 and 6 are concerned with changes in the trends, provision and delivery of medical education in Europe this research has sought to map the 82 identified curriculum trends onto the Bologna dimensions. Appendix 6 contains a table that lists all 82 trends and links them to the relevant Bologna dimension.

Most of the curriculum trends relate to the Student–Centred Learning (42) and Employability (23) dimensions. This is unsurprising as the majority of curriculum trends related to the education 'Process'. Eleven trends related to Readable and Comparable Degrees; 7 to Quality Assurance; 5 to Lifelong Learning; 3 to the Social Dimension; 2 to Education Research and Innovation, and International Openness; and one to Mobility and the Three-cycle Model. Some trends matched more than one of the dimensions.

Of the seven major curriculum trends identified as part of the research, four related to the Employability dimension (training in clinical skills units; communication skills; attitudes and professionalism; prescribing drugs); two to the Student-Centred Learning dimension (MCQs and small group teaching);and one to Readable and Comparable Degrees (curriculum planning committees).

Of the 54 future major curriculum trends, 27 related to the Student-Centred Learning dimension (including easily identifiable learning outcomes; critical thinking skills, attention to student's health and well-being; working in small groups; matching assessments to learning outcomes); 14 related to the Employability dimension (including attitudes and professionalism; communication skills; authentic assessment shadowing; clinical skills units; and ambulatory care); 8 to the Readable and Comparable Degrees dimension (including the harmonisation of learning outcomes across medical

degrees in the same country; assessment based on stated learning outcomes; and curriculum planning committees);6 to Quality Assurance (including evaluated curriculum and teaching staff; rewarding professionalism in teaching and programmes to ensure staff keep up-to-date with teaching expertise); two related to Education, Research and Innovation (the curriculum equipping students with the ability to evaluate research evidence, research skills and the ability to undertake small scale research projects); and one each for Lifelong Learning and the Social Dimension (for both, students admitted from diverse backgrounds); Mobility and International Openness (for both, recognised study abroad opportunities); and the Three-cycle Model (planned continuum of learning between undergraduate and postgraduate studies).

4.2 Curriculum trends and case studies of implementation in Europe

To illustrate how some of the current curriculum trends identified are being implemented today in medical schools, case studies that had been prepared as part of Work Package 6 were examined. The table in Appendix 6 cross –references how certain trends featured currently in the schools as described in the case studies. A full description of the case studies and how they were elicited is given in a separate Work Package 6 report.

Twenty-five case-studies were received from 7 European Countries: Spain (11), Italy (5), Poland (3). Germany (2), Turkey (2), Romania (1), and UK (1). In relation to the Bologna dimensions: 5 case studies related to Quality Assurance initiatives; 4 to Student-Centred Learning; 4 to Education Research and Innovation; 3 to Lifelong learning; 3 to Internationalisation; 2 to Mobility, and 1 each to Readable and Comparable Degrees, the Social Dimension, Employability, and Three-cycle degrees. Many case studies related to more than one dimension however.

4.1.1 Quality Assurance

Initiatives implemented within this dimension included: internal and external quality management systems and guidance; development of graduate competences; and assessment tools. Most of these initiatives were developed at a faculty level, both within and between institutions. One, the Body Donation Programme at the University of Padua (Case Study11) concerned the specific issue of managing anatomical resources. All the initiatives were considered to have led to an improvement in provision at the institution, and some to the standardisation of provision both within institutions and across regions. For example, Case Study 12 from the Medical Schools of Catalonia, concerns the development of guidelines for assessing essential competences in basic medical education, which were developed by an inter-agency group and implemented across Catalonia.

4.1.2 Education Research and Innovation

Initiatives implemented in this dimension all concerned the introduction of innovative modules in areas such as research, communication and practical skills. All were introducing new areas previously absent from the curriculum at that institution, skills that are seen as essential under the Bologna dimensions but were not previously part of the core curriculum. For example, Case Study 14 from the University Rovira I Virgili reviews the introduction of research teaching at various stages of the medical curriculum. Additional changes incorporated within this teaching provision were the use of English in teaching, and inter-disciplinary teaching. For example, Case Study 19 from the University of Padua reviews the introduction of a course on basic practice skills in an institution where the teaching had previously been largely theoretical.

4.1.3 Student-centred Learning and the Teaching Mission in Higher Education

Initiatives implemented within this dimensions include the introduction of modules on new areas of teaching such as professionalism (Case Study 21, University of Pavia) and medical photography and video (Case Study 13, University Rovira I Virgili); and the development of new curriculum based on learning outcomes (Case Study10, University Rovira I Virgili) or active learning approaches (Case Study 7, Ankara University). All the initiatives incorporated new ways of teaching and assessing for that institution. Central to each has also been a fostering of student responsibility and independence. For example, in Case Study 10 (University Rovira I Virgili) students decide when they are ready to be assessed and having this responsibility has led to an improvement in competence levels. Regular information sharing with students via meetings, workshops and the internet is also a common strand.

4.1.4 Lifelong Learning

Initiatives implemented under this dimension included the development of new modules on professionalism (Case Study 2, University of Barcelona) and generic skills (Case Study 8, University of Barcelona) and the development of new means of assessment (Case Studies 4 and 8, University of Barcelona). Computer-aided teaching, virtual learning environments and e-learning software were highlighted as significant facilitating factors. For example, Case Study 4 concerns the use of e-learning technologies to continue the assessment process after the formal teaching of a subject has concluded. Using self-assessment quizzes, students can assess their retention of knowledge and competences. Similarly Case Study 8 involved the introduction of the portfolio as a means of assessment, which was aided by the variety of skills and assessments that can be gained on-line.

4.1.5 International Openness

Initiatives implemented under this dimension include the introduction of an English-taught medical degree (Case Study 22, Universita degli Studi di Pavia), the introduction of ECTS into all phases of medical education (Case Study 16, Medical Universities in Poland), and improvements in the international student exchange process (Case Study 24, University of Medicine and Pharmacy Victor Babes). Each of these case studies stressed the many benefits of international openness such as the continuous transfer of culture and knowledge, student mobility and language skills and the positive impact of students' personal development.

4.1.6 Mobility

Both the initiatives implemented under this dimension concerned attempts to facilitate the integration of study abroad. Case Study 3 (Eberhard Karls University of Tubingen) reports on the introduction of a 'mobility window' into a 4-year Bachelor degree to enable students to spend a year abroad. Case Study 20 (Universita degli Studi di Pavia) reports on the development of a scheme to promote student mobility through short placements.

4.1.7 Readable and Comparable Degrees, Three-cycle Model and Employability

Case studies from these three dimensions will be considered together due to the similarities between them. Each involves an aspect of curriculum change. Case Study 1 (University of Edinburgh) reports on the development of institutional learning outcomes for the medical curriculum to create readable and comparable degrees. Case Study 25 (Jagiellonian University) reports on the introduction of mandatory research training and teaching within doctoral studies programmes and a move to developing learning outcomes for doctoral studies as an example of a Three-cycle model.

Case study 23 (from universities in Spain, France and Croatia) reviews the development of an international collaboration to produce a Masters in Maritime Health as an example of employability.

4.1.8 Social Dimension

Case Study 18 (Eberhard Karls University of Tubingen) reported on the implementation of individualised curriculum within the medical curriculum for students with special social and professional needs. This system has been time consuming but has been supported by close collaboration between key personnel and an electronic admissions system. Whilst students may have more limited ability to establish social contacts, it offers the option of avoiding a prolonged period of study, greater mobility and increases accessibility to people with family or work commitments.

5. Discussion and Conclusions

This study provides a useful insight into current trends in medical education and as such should be of interest to policy makers, deans of medical schools, curriculum and course leaders, teachers, researchers, administrators and students. It identifies current trends relating to students admitted to medical studies, the education programme and the expected attributes of the doctor produced. It identifies a vision for the future development of medical education over the next three years. The information provided can contribute to decisions taken by the stakeholders when a curriculum is revised and further development planned. The report should be of interest also to those responsible for accreditation procedures and national and international policy relating to the training of doctors. The trends identified in the report have been related to the ten Bologna dimensions.

The analysis of current trends, as reported by the respondents, confirms that a growing emphasis is being placed in medical education on an outcome-based approach with outcomes identified and communicated to students and teachers, not just in cognitive areas but in other domains including professionalism and generic competencies such as communication skills, critical thinking, evaluation of evidence and team work. The survey reflects the recognition currently being given to approaches to teaching and learning based on small group work and clinical skills centres. The finding of a widespread establishment of curriculum committees is consistent with the move to professionalism in teaching. Not surprisingly, the results reflect significant differences between institutions and to a lesser extent geographical settings, with some respondents reporting a trend as a 'major' trend in their institution while other respondents note it as a 'minor trend' or as 'not a trend'. It is not surprising that the least recognised current trends were the use of games, measurement of the education environment, contributions to curriculum committees by members of the public and assessment of medical students by patients. While examples can be seen in practice, none have featured prominently in today's medical education agenda.

As reported by the respondents, their vision for medical education over the next 3-5 years envisaged the further development of the current trends with what was seen at present as 'minor' trends becoming 'major' trends and what was 'not seen' as a trend at present becoming a minor or major trend. Where a trend was rated currently as a 'major' trend, when looking to the future the rating increased. The two exceptions to this, not unsurprisingly, were an increase in the number of students admitted to study medicine and the use of MCQs as an assessment tool. In some areas, the number of students admitted to study medicine is already being reduced and MCQs are being replaced to some extent by more authentic assessment tools such as portfolio assessment.

The desired future trends identified by the respondents supports the further development of the move to outcome-based education with well-defined and easily accessible learning outcomes and decisions about the curriculum based on the stated learning outcomes. Specific learning outcomes highlighted included health promotion, management of errors and prescribing, all topics featuring prominently in discussions today about medical education. Also on today's agenda in medical education are generic skills and generic outcomes featured prominently in the responses. These included communication skills, critical thinking, learning and self-assessment skills, evaluation of evidence, teamwork and IT skills.

The study supports the move to see the students as partners in the learning process and not simply consumers or customers, with more attention paid to students' health and wellbeing. Students should engage with the curriculum and this should include students serving on curricular committees.

The move to a greater professionalism in education is addressed in the proposed future trends with greater emphasis being placed on the evaluation of teacher competencies, programmes to update teachers on teaching skills, education support in specialised areas and the acknowledgement and rewards for contributions to teaching. The vision for the future includes the establishment of departments of medical education.

The survey respondents believe that the approaches adopted for teaching and learning should continue to evolve with use being made of the new technologies including simulation and e-learning. The advantages of augmenting clinical experiences with work in clinical skills centres, the ambulatory care setting and in the local community were recognised.

Currently, preparation for practice has been a matter of concern for those engaged in medical education. A fundamental shift envisioned by respondents to the survey is a seamless transition from undergraduate to postgraduate training. It is not explored how this might be delivered in practice and how a true continuum could be achieved. It is envisaged, however, that there will be a greater emphasis on work-based learning such as shadowing a junior doctor.

Possible differences between respondents from EU and non-EU countries were studied. The mean ratings overall for current trends (1.06 ± 0.68 and 1.08 ± 0.68) and for future trends (1.53 ± 0.59 and 1.60 ± 0.56) were similar for EU and non-EU respondents and the pattern of responses was similar. Some differences, however, were noted. There was evidence from the responses with regard to current trends of a greater measure of social responsibility in non-EU responses than EU responses. This included a greater emphasis on admission to the study of medicine of students from diverse backgrounds and the assessment of a range of abilities in a student prior to selection. The responses to future trends suggested a more non-traditional social model of healthcare to be more prevalent in non-EU than EU countries. This included an understanding of alternative or complementary medicine and health promotion as expected learning outcomes. The responses with regard to future trends also suggested a greater measure of social responsibility in non-EU countries with a greater emphasis on training in the local community and ambulatory care settings and on inter-professional education. Further evidence was a greater emphasis on contributions by other professions to the assessment of students and of the consultation with the public with regard to curriculum planning.

EU respondents to the survey demonstrated a more international perspective with a greater emphasis on students moving abroad for part of their training and harmonization of learning outcomes. This is in line with the recommendations contained in the Bologna Declaration.

In EU countries, the responses suggest students are more engaged with the curriculum with a greater emphasis on peer teaching, student-prepared learning resources and students serving on curriculum committees and in the evaluation of teachers. On the other hand, greater attention to student health and well-being is identified in non-EU countries with assessment and learning programmes adapted to the needs of individual students. With regard to assessment there is less

emphasis in EU countries, as reflected in the responses, in objective assessment instruments such as MCQs and the OSCE and more on the use of portfolios for assessment purposes.

New learning techniques are seen as more important in non-EU countries including electronic versions of printed books and lecture content made available through electronic recordings.

More emphasis on professionalism in medical education is placed by respondents from non-EU countries compared to respondents from EU countries as indicated by responses supporting the establishment of medical education units, the availability of staff with specific training and expertise in medical education and the promotion of staff on the basis of their performance as teachers.

In only three trends can a more significant change from the current position be anticipated in EU countries compared to non-EU countries. In the case of admission of students from a diverse background this can be attributed to the low rates with regard to the current position. Nineteen trends showed a greater degree of change in non-EU compared to EU countries although all showed a measure of change in the EU countries.

Gender is on today's agenda on medical education. It is of interest that some gender differences were found in the responses. This was more so with the respondents' vision for the future rather than their perception of the current situation. No obvious reason for the differences was evident. Differences in the respondents' views relating to their age, background, role in the institution, both of the current position and of the future, were noted in relation to a number of trends.

Gender, age, professional background and role in the institution all affected the perceived change required from the current to a desired future position. Trends where the responses were most affected by the investigated categories (gender, age, region, institutional role and profession) were identified. These included selection methods assessing a range of abilities and not just academic achievement, students' health and well-being, use of standardised patients, the use of OSCE, staff expertise in assessment, students as members of the curriculum planning committee and staff with training in education to support the local education initiative. While these differences are of interest and should be recognised in educational planning, particularly with regard to international initiatives, the reasons for the differences were not explored in this study.

From the respondents' reported perception of the present situation with regard to the trends and their vision for 3-5 years in the future, it was possible to estimate the degree of change that would be required to move to the desired future position. Where the trend featured prominently with regard to the current position, little change was necessary for it to continue to feature as a major trend. Where a trend was identified as currently 'not a trend' or only a 'minor trend', significant change could take place without the trend appearing among the most highly rated future trends. Examples of this were the measurement of the education environment, the use of virtual patients and the use of games. In these cases a significant change was suggested from the current to the future position but from a low starting point. Such trends need to be given particular consideration when planning for the future as they may otherwise be ignored.

Aspects of professionalism in medical education, new learning technologies, assessment and approaches to curriculum planning all represent areas where significant change may be anticipated. Medical errors and how they can be prevented in clinical practice features not infrequently in the

news. It is not surprising that the trend where the greatest need for change was perceived was that the medical undergraduate curriculum should prepare students with the skills to report, analyse and prevent medical errors.

The limitations of the study are recognised. Respondents to the survey volunteered their responses and they may represent a group with a greater enthusiasm for medical education than their colleagues. This may be reflected in a more progressive vision for the future. This self-selection should not affect the report of the current status of the trends in their institution. The respondents represented different age groups, different professional backgrounds, different seniorities and roles in an institution and different geographical locations. The inclusion of respondents from different age groups, different backgrounds and with different roles is important as some differences were found in the responses where these were a variable. It seems likely, however, that the views expressed provide a general vision of where we are today with the current trends identified and what is seen as a desirable vision for developments over the next three to five years.

The survey of future trends look at desired rather than anticipated future trends. It was intended to provide a vision or set of targets at which we should aim. It was recognised that there would be a number of obstacles in achieving this vision. The second survey identified some of these obstacles. They fall, as could be predicted, in the areas of factors favouring the status quo, factors relating to the proposed change itself, factors associated with the process of change and factors associated with the cost of change. Factors in all four areas were seen as potential obstacles to change. Factors relating to cost and the impact of change on teachers featured prominently. A study of the factors and descriptions of obstacles to change reported could be of value to those in an institution charged with implementing change and with moving from the current situation to an agreed vision for the future.

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Appendices

Appendix 1 – Curriculum Trends

Q 12. & Q 13. Trends relating to the graduate doctor as a product of the curriculum

12.a. The curriculum has well defined and easily accessible learning outcomes which are communicated to the students and teachers.
12.b. Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.
12.c. Learning outcomes are harmonized across medical schools in the same country.
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.
12.f. Learning outcomes include communication skills.
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.
12.h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies.
12.i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects.
12.j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed.
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.
13.b. The curriculum equips students with the ability to prescribe drugs.
13.c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams.
13.d. The curriculum promotes health promotion as an important learning outcome.
13.e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics.
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.
13.g. The graduate of the medical school is equipped with skills in teaching.
13.h. The curriculum prepares students with the skills expected of global citizens.
13.i. The curriculum develops students' ability to assess their own competence.
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.

Q 14. & Q 15. Trends relating to students

14.a. There is an increased number of students admitted to medical schools to study medicine.
14.b. Students admitted to study medicine are from diverse backgrounds.
14.c. Students admitted to study medicine have a first degree in another area.
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.
14.e. Selection methods are used that assess a range of abilities and not just academic achievement.
15.a. Attention is paid to student's health and well-being.
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.

15.c. Students contribute to the teaching programme as peer tutors.
15.d. Students are co-authors and collaborate in the development of learning resources.
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.

Q 16. – Q 22. Trends relating to the educational process

16.a. Electronic versions of printed medical books are used.
16.b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities.
16.c. Some courses are available entirely online.
16.d. Games are used to assist medical students in their learning.
16.e. Less reliance is placed on the use of lectures.
16.f. Lecture content is available through electronic recording.
16.g. Students use simulators or devices to complement the use of real patients.
16.h. People are trained as standardised patients and used to complement work with real patients.
16.i. Virtual patients presented electronically are used.
16.j. Students work in small groups.
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning.
16.l. Opportunities are provided specifically to help students develop team work skills.
17.a. Students are trained in Ambulatory care settings.
17.b. Training is provided in clinical skills units.
17.c. Training is provided in the local community.
17.d. Training is provided in a rural setting in addition to an urban setting.
17.e. Training is provided through work-based learning such as shadowing a junior doctor.
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase.
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.
18.e. Students for part of the course are taught alongside students from other professions.
18.f. A problem-based approach is adopted with the learning structured around a set of problems.
19.a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor.
19.b. Assessment is integrated rather than each subject being assessed independently.
19.c. Multiple Choice Questions (MCQs) are used to assess students.
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.
19.e. Electronic assessment is used.
19.f. Portfolios are used as a tool to assess students' competence.
19.g. Other professions as well as doctors contribute to the assessment of students.
19.h. Patients contribute to the assessment or rating of the students' performance.
19.i. Assessment is closely matched to the stated learning outcomes.
19.j. There is an element of peer assessment where students assess each other.
19.k. A progress test is used.
19.l. Staff with training and experience in assessment support the assessment programme in the medical school.
20.a. The curriculum is systematically and objectively evaluated.

20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).
21.a. There is a committee responsible for curriculum planning.
21.b. Students are full members of the curriculum planning committee.
21.c. Members of the public are consulted in curriculum planning.
21.d. Other health professionals are consulted in planning the curriculum.
21.e. Recent graduates are consulted in curriculum planning.
21.f. A medical education unit or department supports the education initiative in the medical school.
21.g. One or more staff with specific training and expertise in education support the local education initiative.
21.h. Decisions about the curriculum are based on an examination of the evidence reported in medical education.
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff.
22.b. Other healthcare professionals contribute to the teaching of medical students.
22.c. Professionalism in teaching is acknowledged and rewarded in the school.
22.d. Staff members can be promoted on the basis of their performance as a teacher.
22.e. All staff members are expected to have had training in teaching.
22.f. Programmes are in place to assist staff to keep up to date with their teaching expertise.

Appendix 2 – Copy of Curriculum Trends Survey Questionnaire

10/11-ESWCE-Work Package 5,
Curriculum Trends in Medical
Education

Welcome

Dear colleague,

Numerous challenges are facing medical education including advances in medicine, changes in health care delivery systems, evolving public expectations, new approaches to education and developments in educational technology. In medical schools, curricula are being re-examined in the light of these challenges. To help in this process, a survey of curriculum trends is being undertaken as part of the MEDINE 2 initiative funded by the EU. We are sampling the views of individuals from diverse backgrounds and we would very much like to include your views.

A number of developments have been identified by the MEDINE 2 Work Package 5 Task Force under the leadership of AMEE, from a literature review of curriculum trends in medicine. The developments have been classified in terms of developments relating to (1) the "product" or the doctor, (2) the "student" entering medical studies, and (3) the "education process" including teaching and learning methods and strategies, and student assessment.

We would very much welcome firstly your views with regard to the current position of the trends in your institution, and secondly your vision as to the desirable developments in medical schools over the next 3 to 5 years. We are asking you for your vision as to w
prediction as to what will happen in reality. Please rate your perception for each development as "not" a feature", a "minor" feature, or a "major" feature. Alternatively you can select the "don't know" option if you feel you are not in a position to give an answer. Finally, we ask you to identify any trends or development that you think are missing from the list.

The curriculum trends referred to in this survey are presented as short statements. A more detailed description of some of the trends is also available online through the "More Info" links provided on relevant webpage(s) of the survey. You will notice that there is an overlap of some developments between the different categories.

collect will not contain any personal information about
you. No-one will be able to link the data you provide to your identity and name. A summary of the findings will be
produced and we will send you a copy if you let us know of your interest. The collated findings from the research
will be accessible through MEDINE 2 website and it is hoped that the results will be disseminated at academic

conferences and published in an academic journal.

Your cooperation in filling in this questionnaire is much appreciated. Thanks for your contribution.

If you have any questions or comments about this study, please contact me at:
r.m.harden@dundee.ac.uk

Professor Ronald M Harden
Work Package 5 Leader and General Secretary of AMEE

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Information on completing the survey/Disability/Data Protection

Information on completing the survey

The survey consists of statements which briefly describe each curriculum trend identified so far in medical education. You are asked to give your views with regard to the current position of the trends in your institution, and secondly your vision as to the desirable developments in medical schools over the next 3 to 5 years. We are asking you for your vision as to what should happen in medical education rather than your prediction as to what will happen in reality. Please rate your answers with regard to each curriculum trend as "not" a feature", a "minor" feature, or a "major" feature. Alternatively you can select the "don't know" option if you feel you are not
in a position to give an answer.

To assist you in completing this survey, we have included a definition to many recommendations in the "More Info" link provided on relevant webpages of the survey.

you cannot return to or amend the previous page.

Please note that you can complete the survey in different stages by selecting the "Finish Later" button.

Disability

You can customise the text size/colour to meet your individual needs by using the accessibility features of your web browser. Further information on how to do this is available from the BBC 'My Web My Way' site http://www.bbc.co.uk/accessibility

he survey in an alternative format please contact:

Library & Learning Centre
University of Dundee

Tel: 01382 385934/385935
Email: LLC-Surveys@dundee.ac.uk

Data Protection

All data collected in this survey will be held anonymously and securely.

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Information about you

1. Name:

2. Title:

Prof Dr Mr Mrs Miss Ms

3. University or Institution:

4. Country:

5. Role in the Institution:
(select all that apply)

Dean
Vice Dean
Head of Medical Education Unit
Head of Undergraduate Studies
Head of International Relations
Head of EU Project
Head of Curriculum
Teacher
Student
Administrator
Other (please specify):

6. Professional Background:

Doctor Nurse Lay person
Other (please specify):

7. Gender:

Male Female

8. Age:

<20 years 20-29 years 30-49 years 50-65 years >65 years

9. E-mail Address:

10. Telephone number:

11. Fax number:

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Continue > Check Answers & Continue >

Trends relating to the graduate doctor as the product of the curriculum

12. More Info

	Current Position (in your institution) (more generally)				Future Developments/Trends			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't Know
a. The curriculum has well defined and easily accessible learning outcomes which are communicated to the students and teachers.								
b. Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.								
c. Learning outcomes are harmonized across medical schools in the same country.								
d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.								
e. The curriculum emphasises the importance of attitudes and professionalism in								

the doctor as well as the acquisition of knowledge and the development of skills.

f. Learning outcomes include communication skills.

g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.

h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies.

i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects.

j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed.

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MORE INFORMATION

Question 12

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DEFINITIONS OF TRENDS

accessible learning outcomes which are communicated to the students and teachers.

Definition: Learning outcomes are the statements defining what learners should be able to do at the end of a learning experience. They are often categorised into knowledge, skills, and attitudes and can be used to make a constructively aligned curriculum.

12e: The curriculum emphasizes the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.

Definition: The medical curriculum prepares students to adhere to a set of values comprising both a formally agreed-upon code of conduct and the informal expectations of colleagues, clients and society. The key values include acting in a patient's interest, responsiveness to the health needs of society, maintaining the highest standards of excellence in the practice of medicine and in the generation and dissemination of knowledge. In addition to medical knowledge and skills, medical professionals should present psychosocial and humanistic qualities such as caring, empathy, humility and compassion, as well as social responsibility and sensitivity to people's culture and beliefs. All these qualities are expected of members of highly trained professions.

12f: Learning outcomes include communication skills.

Definition: Curriculum has components of how to develop effective patient-doctor communication including forming and maintaining relationships with colleagues, to gather and share information, to gain informed consent, to support problem solving, to provide reassurance, to alleviate distress and to make best-evidence based decisions. In sum, medical students learn about how doctors and patients talk with each other in search for mutual understanding and shared solutions to problems.

12g: The curriculum equips the students with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.

Definition: Curriculum emphasizes the development of critical thinking in medical students. This involves determining the meaning and significance of what is observed or expressed, or, concerning a given inference or argument, determining whether there is adequate justification to accept the conclusion as true.

12i: The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects.

Definition: Curriculum equips medical students with scientific inquiry skills with which they become able to systematically search for new knowledge and better understanding, such as of the natural world or determinants of health and disease. Research can take several forms: empiric (observational), analytic, experimental,

theoretical and applied.

12j: The curriculum equips the students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed.

Definition: The curriculum is designed to equip medical doctors with the IT skills that will allow them to (1) find
and manage information, (2) collaborate online with colleagues worldwide, and (3) use relevant software and hardware appropriately.

OK

Trends relating to the graduate doctor as the product of the curriculum (cont'd)

13. More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.								
b. The curriculum equips students with the ability to prescribe drugs.								
c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams.								
d. The curriculum promotes health promotion as an important learning outcome.								
e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics.								
f. Expected learning outcomes include an understanding of complementary or alternative medicine.								
g. The graduate of the medical school is equipped with skills in teaching.								
h. The curriculum prepares students with the skills expected of global citizens.								
i. The curriculum develops students' ability to assess their own competence.								
j. The curriculum empowers students to take responsibility for their own learning and equips them								

for their life-long learning.

14. On admission to medical school More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. There is an increased number of students admitted to medical schools to study medicine.	○	○	○	○	○	○	○	○
b. Students admitted to study medicine are from diverse backgrounds.	○	○	○	○	○	○	○	○
c. Students admitted to study medicine have a first degree in another area.	○	○	○	○	○	○	○	○
d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.	○	○	○	○	○	○	○	○
e. Selection methods are used that assess a range of abilities and not just academic achievement.	○	○	○	○	○	○	○	○

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MORE INFORMATION

Question 13

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DEFINITIONS OF TRENDS

13a: The curriculum prepares the students with the skills to report, analyse and prevent medical errors.

Definition: The curriculum provides medical students with an understanding of how they should report, analyse, and prevent medical errors that often lead to adverse healthcare events.

13c: Graduates from the medical school are trained to collaborate and cooperate effectively in teams.

Definition: The curriculum emphasizes the acquisition of collaborative and team skills through pedagogical strategies like problem-based, peer assisted and interprofessional learning.

13e: The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics.

Definition: The curriculum includes the application of the principles and rules of economics in the sphere of health. In broad terms, it addresses the analysis and evaluation of health policy and the health system from an economic perspective. In particular, it includes health system planning, market mechanisms, demand for and supply of health care, micro-economic evaluation of individual diagnostic and therapeutic procedures, on, and evaluation of the performance of health care systems in terms of equity and allocative efficiency.

13f: Expected learning outcomes include an understanding of complementary or alternative medicine.

Definition: Complementary or alternative competence means the competence of any healing practice that does not fall within the realm of conventional medicine. It encompasses therapies with an historical or cultural, rather than a scientific, basis like homeopathy, acupuncture etc... Alternative medicine practices are as diverse in their foundations as in their methodologies. Practices may incorporate or base themselves on traditional medicine, folk knowledge, spiritual beliefs, or newly conceived approaches to healing. Jurisdictions where alternative medical practices are sufficiently widespread may license and regulate them.

13h: The curriculum prepares students with the skills expected of global citizens.

Definition: Graduates should have sound knowledge of global issues, the skills for working in an international context and the values of a 'global citizen' including moral and ethical disposition to practice their profession in local and global contexts and remind them of their relative responsibilities within various communities.

13i: The curriculum develops students' ability to assess their own competence.

Definition: The curriculum is geared toward involving the students into the process of evaluating their own deficiencies, achievements, behaviour or professional performance and competencies. Self-assessment is an

important part of self-directed and lifelong learning as it creates a need for improvement while it justifies confidence in ones competence.

13j: The curriculum equips medical students for life long learning.

Definition: Life-long learning is the "lifelong, voluntary, and self-motivated" pursuit of knowledge for either personal or professional reasons. As such, it not only enhances active citizenship and personal development, but also competitiveness and employability. Therefore, with the increasing knowledge in medicine, the curriculum equips students with sound learning habits which will stand them in good stand throughout their

OK

MORE INFORMATION

Question 14

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DEFINITIONS OF TRENDS

14b: Students admitted to study medicine are from diverse backgrounds.

Definition: Students come from different social, ethnic, cultural and educational backgrounds.

14e: Selection methods are used that assess a range of abilities and not just academic achievements.

Definition: Selection methods assess not only academic achievements but a range of competencies in students for example, problem solving skills, creativity, communication skills, and attitudes.

OK

Trends relating to students (cont'd)

15. After admission to medical school More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. Attention is paid to student's health and well being.								
b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.								
c. Students contribute to the teaching programme as peer tutors.								
d. Students are co-authors and collaborate in the development of learning resources.								
e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.								

Trends relating to the educational process

16. Tools More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. Electronic versions of printed medical books are used.								
b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities.								
c. Some courses are available entirely online.								

d. Games are used to assist medical students in their

learning.

e. Less reliance is placed on the use of lectures.

f. Lecture content is available through electronic

recording.

g. Students use simulators or devices to complement

the use of real patients.

h. People are trained as standardised patients and

used to complement work with real patients.

i. Virtual patients presented electronically are used.

j. Students work in small groups.

k. Students are encouraged in the curriculum to be

part of or build a social network to support their
learning.

l. Opportunities are provided specifically to help

students develop team work skills.

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MORE INFORMATION

Question 15

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DEFINITIONS OF TRENDS

15c: Students contribute to the teaching programme as peer tutors.

Definition: Medical students are given opportunities to provide help to and be helped by peer students. The help given or received can be under different forms including mentoring, assisting, supporting, teaching, instructing, facilitating and advising.

15d: Students are co-authors and collaborate in the development of learning resources.

Definition: Students contribute to the development of learning resources including electronic or print-based learning materials.

OK

MORE INFORMATION

Question 16

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16b: Courses are conducted as blended learning combining face-to face & web-based learning opportunities.

Definition: Blended Learning refers to a mixing of different learning environments including for example face-to-
face lectures, small group work and learning opportunities online.

16f: Lecture content is available through electronic recordings.

Definition: In addition to lecture being delivered face-to-face to students, recordings of lectures are made available through audio and video file (or both) for example podcasts.

16g: Students use simulators or devices to complement the use of real patients.

Definition: Simulation devices serve as an alternative to the real patient and permit educators to gain full control of a pre-selected clinical scene without the risk of distressing patients or encountering other harmful aspects of

16h: People are trained as standardised patients and used to complement work with real patients.

Definition: Standardized patients are individuals who have been trained to reliably reproduce the history and/or physical findings of typical clinical cases. Sometimes health care providers or actors are used to accomplish this goal. They can be used for teaching or assessment and are designed to make examination and assessment of

16i: Virtual patients presented electronically are used.

Definition: The term virtual patient is used to describe interactive computer simulations used in health care education. Virtual patients allow the learner to take the role of a health care professional and develop clinical skills such as making diagnoses and therapeutic decisions. The use of virtual patient provides medical students
There are many different formats a virtual patient may
take. However the overarching principle is that of interactivity - a virtual patient will have mechanisms for the learner to interact with the case and material or information is made available to the learner as they complete a range of learning activities.

16k: Students are encouraged in the curriculum to be part of or build a social network to support their learning.

Definition: A social network is a service which focuses on building and reflecting social relations among people

who share the same interests including professional and voluntary activities. The best example of social networks is Facebook. It essentially consists of a representation of each user's profile and a variety of additional services. Social networks are web-based and provide means to interact over the internet.

OK

Trends relating to the educational process (cont'd)

17. Contexts More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. Students are trained in Ambulatory care settings.								
b. Training is provided in clinical skills units.								
c. Training is provided in the local community.								
d. Training is provided in a rural setting in addition to an urban setting.								
e. Training is provided through work-based learning such as shadowing a junior doctor.								

18. Strategies More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.								
b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.								
c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase.								
d. The curriculum adopts a vertical integrated								

approach with courses built around themes running
across different years of the curriculum.
e. Students for part of the course are taught

alongside students from other professions.
f. A problem-based approach is adopted with the

learning structured around a set of problems.

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MORE INFORMATION

Question 17

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DEFINITIONS OF TRENDS

17a: Students are trained in ambulatory care setting.

Definition: Ambulatory care is medical care delivered on an outpatient basis.

17b: Training is provided in clinical skills units.

Definition: Clinical skills units are places where students, using simulators and standardized patients, can practice and acquire technical, communication and examination skills in a protected environment without being concerned with the distress such learning may cause on real patients.

17e: Training is provided through work-based learning such as shadowing a junior doctor.

Definition: Work-based learning refers to formal learning that is based wholly or predominantly in health care setting. It is a form of work experience. An example is medical students shadowing the doctor on duty.

OK

Question 18

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DEFINITIONS OF TRENDS

18a: The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.

Definition: The continuum of learning is a continuous process of acquiring new knowledge and skills during undergraduate education, postgraduate training and throughout one's professional life.

rriculum, students are provided with the opportunity to study in more depth areas of interest to them.

Definition: In the medical educational programme, students are given the opportunity to select subjects or projects of their own choice, not covered by obligatory medical courses. This enables students to study an area in more depth and to pursue individual aspirations. It provides students with increased responsibility to further their own learning, and facilitates career choice by prov

18c: The curriculum adopts horizontal integration across the subjects taught in the same year or phase.

Definition: This is a teaching method that interrelates subjects frequently taught in separate academic courses. In integrated teaching, subjects are presented as a meaningful whole. Horizontal integration functions between parallel disciplines normally taught in the same phase of the curriculum such as anatomy, histology and medicine, surgery and obstetrics and gynaecology in the later years.

18d: The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.

Definition: This is a teaching method that unifies subjects which are often taught in detached academic departments. Integrated teaching is geared towards providing a holistic and meaningful presentation of subjects. sciplines traditionally taught in different phases of curriculum; it occurs throughout the curriculum with clinical and basic sciences beginning together in the early years and continuing in the later years.

18f: A problem-based approach is adopted with the learning structured around a set of problems.

Definition: PBL is an approach where the students' learning occurs related to a presented problem. Students learn in small groups supported by a tutor. The problem contains triggers designed to evoke objectives or concepts which are used to set the agenda for individual or group investigation and learning after the initial session. Students monitor their achievements and to set further learning goals as required. The tutor's role is to offer support for learning and to help reach the expected outcomes.

OK

Trends relating to the educational process (cont'd)

19. Student Assessment More Info

	Current Position (in your institution)			Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor.								
b. Assessment is integrated rather than each subject being assessed independently.								
c. Multiple Choice Questions (MCQs) are used to assess students.								
d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.								
e. Electronic assessment is used.								
f. Portfolios are used as a tool to assess students' competence.								
g. Other professions as well as doctors contribute to the assessment of students.								
h. Patients contribute to the assessment or rating of the students' performance.								
i. Assessment is closely matched to the stated learning outcomes.								
j. There is an element of peer assessment where students assess each other.								
k. A progress test is used.								

l. Staff with training and experience in assessment

support the assessment programme in the medical school.

20. Management - Curriculum Evaluation More Info

	Current Position (in your institution)			Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. The curriculum is systematically and objectively evaluated.								
b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.								
c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).								

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MORE INFORMATION

Question 19

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DEFINITIONS OF TRENDS

19a: Attention is paid to authentic assessment with assessment closely related to the work of a doctor.

Definition: Authentic assessment refers to the measurement of intellectual accomplishments and competences that are worthwhile, significant, meaningful and related to the real world of medical practice.

19b: Assessment is integrated rather than each subject being assessed independently.

Definition: In an integrated curriculum, the overall learning outcomes and the integration of the different subjects
are assessed rather than the students' mastery of each subject being assessed separately.

19d: The Objective Structured Clinical Examination (OSCE) is used as a method of student assessment.

Definition: OSCE is a standardized way of assessing clinical competencies where students' clinical skills are assessed in the examination as their rotate round a series of stations. One or more components of competence are assessed at each station.

19e: Electronic assessment is used.

Definition: E-assessment is the use of information technol used to assess cognitive
and practical abilities. Cognitive abilities are assessed using e-testing software; practical abilities are assessed using e-portfolios or simulation software.

19f: Portfolios are used as a tool to assess students' competence.

Definition: A Portfolio is a collection of evidence that learning has taken place, usually set within agreed objectives
or a negotiated set of learning activities. Some portfolios are developed in order to demonstrate the progression of
learning, while others are assessed against specific targets of achievement. In essence, portfolios contain material
collected by the learner over a period of time. They are the learner's practical and intellectual property and the learner takes responsibility for the portfolio's creation and maintenance. Because the portfolio is based upon the real experience of the learner, it helps to demonstrate the connection between theory and practice,
s, and enabling assessment within a framework of clear
criteria and learning objectives.

19g: Members of other professions as well as doctors contribute to the assessment of students.

Definition: Other Health care professionals including nurses, physiotherapists, speech therapists, and health visitors can contribute to the assessment of the students' competence.

19j: There is an element of peer assessment where students assess each other.

Definition: Peer assessment is the process of students grading each
assignments usually based on teachers' benchmarks. The typical measurement tools for this form of testing are checklists and questionnaires.

19k: A progress test is used.

Definition: Progress test is a form of assessment where groups of learners of different seniority (i.e., different classes in a curriculum) are given the same written test. The test is comprehensive by sampling all relevant disciplines in a curriculum. The test is repeated regularly in time. Test item
occasion.

OK

MORE INFORMATION

Question 20

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DEFINITIONS OF TRENDS

20c: The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).

Definition: The education environment is the material social or emotional context in which the learning occurs. It
may encourage or support the learning or work against it. The Dundee Ready Educational Environment Measure (DREEM) is a generic instrument for measuring students' perceptions of undergraduate health professions curricula.

OK

Trends relating to the educational process (cont'd)

21. Management - Curriculum Planning More Info

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know
a. There is a committee responsible for curriculum planning.	○	○	○	○	○	○	○	○
b. Students are full members of the curriculum planning committee.	○	○	○	○	○	○	○	○
c. Members of the public are consulted in curriculum planning.	○	○	○	○	○	○	○	○
d. Other health professionals are consulted in planning the curriculum.	○	○	○	○	○	○	○	○
e. Recent graduates are consulted in curriculum planning.	○	○	○	○	○	○	○	○
f. A medical education unit or department supports the education initiative in the medical school.	○	○	○	○	○	○	○	○
g. One or more staff with specific training and expertise in education support the local education initiative.	○	○	○	○	○	○	○	○
h. Decisions about the curriculum are based on an examination of the evidence reported in medical education.	○	○	○	○	○	○	○	○

22. Teacher

	Current Position (in your institution)				Future Developments/Trends (more generally)			
	Not	Minor	Major	Don't know	Not	Minor	Major	Don't know

know

a. The teaching performance of staff is evaluated

with feedback given to the member of staff.

b. Other healthcare professionals contribute to the

teaching of medical students.

c. Professionalism in teaching is acknowledged

and rewarded in the school.

d. Staff members can be promoted on the basis of

their performance as a teacher.

e. All staff members are expected to have had

training in teaching.

f. Programmes are in place to assist staff to keep

up to date with their teaching expertise.

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MORE INFORMATION

Question 21

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DEFINITIONS OF TRENDS

21f: A medical education unit or department supports the education initiative in the medical school.

Definition: A Medical education unit or department is a made up of a group of people with particular interest and
expertise in medical education and with responsibilities for supporting curriculum planning, staff development or
research in medical education.

21h: Decisions about the curriculum are based on an examination of the evidence reported in medical education.

Definition: Evidence-based education is a move away from teaching-related decisions being taken on the basis of teachers' hunches opinions or guesses to decisions being made informed by evidence from research studies or documented experiences.

OK

Edit

23. Other developments not listed in the survey:

Note that once you have clicked on the CONTINUE button your answers are submitted and you cannot return to review or amend that page.

Continue >Check Answers & Continue >

Edit

Online Surveys
Develop, launch and analyse Web-based surveys



Edit

Final Page

THANKS FOR YOUR KIND COOPERATION.

If you have any queries please feel free to contact Prof Ronald Harden at: r.m.harden@dundee.ac.uk

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11/12-C4-M-Curriculum Trends in Medical Education: Survey of Obstacles to Change

Welcome

Dear Colleague

A survey of curriculum trends has been undertaken as part of the MEDINE2 initiative funded by the EU and analysis of the responses is in progress.

A number of respondents to the survey expressed concern that there existed significant obstacles to the implementation of curriculum change in their Institutions. We believe it will enhance the value of the final report if we address this topic and we would like to have your views on obstacles to change. We would therefore be grateful if you completed the attached questionnaire. Complete confidentiality will be maintained.

Your cooperation is much appreciated. If you have questions or comments about the study please contact me by email at: r.m.harden@dundee.ac.uk

Yours sincerely

Professor Ronald M Harden
Work Package 5 Leader and General Secretary of AMEE

Information about you

1. Name:

2. Title:

Prof Dr Mr Mrs Miss Ms

3. University or Institution:

4. Faculty:

5. Country:

6. Role in the institution:
(select all that apply)

- Dean
- Vice Dean
- Head of Medical Education Unit
- Head of Undergraduate Studies
- Head of International Relations
- Head of EU Project
- Head of Curriculum
- Teacher
- Administrator
- Other *(please specify)*:

7. Professional Background:

- Doctor
- Nurse
- Lay Person
- Other *(please specify)*:

8. Gender:

Male Female

9. Age:

<20 ys 20-29 ys 30-49 ys 50-65 ys >65 ys

10. E-mail Address:

11. Telephone number:

12. Fax number:

Obstacles to change

The factors listed have been identified as potential serious obstacles to change. How important are these in practice? Think about your own school or organisation and a change in the curriculum that has been implemented, is in progress or was proposed. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

Factors in favour of status quo in the institution

13. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

	Not An Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Don't Know
a. Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised.	○	○	○	○	○	○
b. A conservatism, rigidity and reluctance to change.	○	○	○	○	○	○
c. A bad experience of previous change efforts by members of the institution.	○	○	○	○	○	○
d. Lack of support from students for change to the curriculum.	○	○	○	○	○	○

Problems relating to the proposed change

14. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

	Not An Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Don't Know
a. There is lack of clear information about the proposed new approach.	○	○	○	○	○	○
b. Staff do not have a clear vision of the change.	○	○	○	○	○	○
c. Teachers are not convinced that the change will be an improvement on the current approach.	○	○	○	○	○	○
d. There is a lack of evidence to support the benefits to be gained from the proposed change.	○	○	○	○	○	○
e. Teachers do not have sufficient experience and are not trained to implement the new approach.	○	○	○	○	○	○
f. The majority of staff do not want the change.	○	○	○	○	○	○
g. There are cultural differences that might influence the implementation of the approach.	○	○	○	○	○	○
h. The change is not in line with national guidelines or recommendations.	○	○	○	○	○	○
i. The change is not in line with the accreditation process for the school.	○	○	○	○	○	○
j. It is not possible to evaluate, in the short term, the benefits of the change.	○	○	○	○	○	○

Obstacles to change (cont'd)

The factors listed have been identified as potential serious obstacles to change. How important are these in practice? Think about your own school or organisation and a change in the curriculum that has been implemented, is in progress or was proposed. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

Factors associated with the cost of implementing the change

15. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

	Not An Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Don't Know
a. Fewer resources to support new education initiatives are available at a time of financial restraint.	○	○	○	○	○	○
b. The potential benefits of the change are not worth its cost in time and resources required to implement it.	○	○	○	○	○	○
c. Planning the change will increase staff workload.	○	○	○	○	○	○
d. Implementing the change will increase the staff workload.	○	○	○	○	○	○
e. The skills needed to implement the change are lacking.	○	○	○	○	○	○
f. A staff training programme needs to be delivered.	○	○	○	○	○	○

Factors associated with the process of change

16. Please rate how significant were the factors in opposing change, or serving as a barrier to change.

	Not An Obstacle	Minor Obstacle	Significant Obstacle	Considerable Obstacle	Major Obstacle	Don't Know
a. An appropriate decision-making process to agree and implement the change is lacking.	○	○	○	○	○	○
b. Consultation with the range of stakeholders (including university and health service staff) is lacking.	○	○	○	○	○	○
c. There is a lack of support for the change from the University	○	○	○	○	○	○
d. There is a lack of support by the dean or senior decision-makers in the medical school.	○	○	○	○	○	○
e. The extent of the change from the existing curriculum required is too great.	○	○	○	○	○	○
f. Commitment by staff to their teaching responsibilities is lacking. Staff do not have a sense of personal responsibility for improving education.	○	○	○	○	○	○
g. The teacher's work in the field is not incentivised, valued or rewarded.	○	○	○	○	○	○
h. There are conflicting interests for the teacher between research and/or clinical care.	○	○	○	○	○	○
i. The process of change in the institution is too bureaucratic.	○	○	○	○	○	○

17. Other Obstacles

18. Other Comments

Appendix 4 – Limitations to Statistical Analysis

First, in rare instances, especially when a high degree of missing data is present, expected value imputation procedures can produce overconfident estimates. This issue can only be overcome by multiple imputation procedures that are incompatible with the model selection approach used, complicated to use in real life modelling situations and are not replicable in an exact way due to their completely random stochastic nature. There is very little risk of substantial bias being present in the confidence intervals and/or p-values in this specific analysis. The point estimates remain completely unbiased. Without the use of the imputation procedure (with dropping all cases with any relevant missing values) both power would have suffered and the point estimates would have been biased. For this reason the analyst decided that the expected value imputation procedure is the best possible approach available to deal with missing data.

Secondly, the modelling approach utilised here was specifically designed for the trend analysis (that uses the difference score between the expected future and the current trend). This was appropriate as the difference score is on a 5 point scale and is quasi-normally distributed. Then, since additional analysis was requested on the raw current and future scores, the same procedure was used for the raw responses which are coded only on a three point scale. While linear regression can produce biased results when the number of categories in the dependent variable drops below 5, we expect this is not a great issue with the analysis at hand. Alternative procedures could have included an ordered probit or logit explanation but this was discarded as (1) the results are more comparable across the raw scores and trend lines when the same procedure is used, (2) their interpretation is not as straight forward as linear procedures and (3) these ordered procedures are not compatible with the model selection or the imputation approach used. If the raw score results (not the trends) are presented at a forum where comparison is not a priority, the analyst recommends an ordered regression procedure should be used instead of the linear procedure. In this case, it is probably appropriate to round the imputed values to the closest valid response and use the model produced by the linear model selection procedure.

Appendix 5 – Perceived obstacles to change

Table A: Statements ranked by highest 'not an obstacle' response

Statement	Not an obstacle
14i The change is not in line with the accreditation process for the school	53.8%
14h The change is not in line with national guidelines or recommendations	52.8%
13d A lack of support from students for change in the curriculum	41.3%
16d There is a lack of support by the dean or senior decision-makers in the medical school	40.2%
16c There is a lack of support for change from the University	32.7%
14g There are cultural differences that might influence the implementation of the new approach;	28.5%
13c A bad experience of previous change efforts by members of the institution	27.8%
16a An appropriate decision-making process to agree and implement change is lacking	20.1%
16b Consultation with the range of stakeholders (including university and health service staff) is lacking	19.2%
15b The potential benefits of the change are not worth its cost in time and resources required to implement it	19.0%
14j It is not possible to evaluate, in the short term, the benefits of the change	18.3%
16e The extent of the change from the existing curriculum is too great	16.6%
16f Commitment by staff to their teaching responsibilities is lacking. Staff do not have a sense of personal responsibility for improving education	15.9%
14d There is a lack of evidence to support the benefits of the proposed change	12.9%
14a A lack of information about the proposed new approach	12.0%
14f The majority of staff do not want change	11.5%
16i The process of change in the institution is too bureaucratic	11.1%
15f A staff training programme needs to be delivered	11.0%
13a Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised	10.0%
15e The skills needed to implement the change are lacking	9.1%
13b A conservatism, rigidity and reluctance to change	8.1%
16h There are conflicting interests for the teacher between research and/or clinical care	7.8%
15a Fewer resources to support new education initiatives are available at a time of financial restraint	7.6%
15c Planning the change will increase staff workload	7.5%
16g The teacher's work in the field is not incentivised, valued or rewarded	6.7%
14c Teachers are not convinced that the change will be an improvement on the current approach	6.6%
14b Staff do not have a clear vision of the change	6.5%
15d Implementing the change will increase staff workload	6.4%
14e Teachers do not have sufficient experience and are not trained to implement the new approach	5.6%

Table B: Statements ranked by highest 'Major Obstacle' Response

Statement	Major Obstacle
16h There are conflicting interests for the teacher between research and/or clinical care	31.7%
16g The teacher's work in the field is not incentivised, valued or rewarded	30.6%
13b A conservatism, rigidity and reluctance to change	24.6%
14e Teachers do not have sufficient experience and are not trained to implement the new approach	23.6%
15d Implementing the change will increase staff workload	22.5%
16f Commitment by staff to their teaching responsibilities is lacking. Staff do not have a sense of personal responsibility for improving education	20.0%
15a Fewer resources to support new education initiatives are available at a time of financial restraint	19.85
14b Staff do not have a clear vision of the change	19.1%
14c Teachers are not convinced that the change will be an improvement on the current approach	19.1%
15e The skills needed to implement the change are lacking	18.3%
15c Planning the change will increase staff workload	18.2%
16i The process of change in the institution is too bureaucratic	18.0%
14f The majority of staff do not want change	17.6%
16d There is a lack of support by the dean or senior decision-makers in the medical school	15.4%
13a Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised	14.2%
16a An appropriate decision-making process to agree and implement change is lacking	14.1%
16c There is a lack of support for change from the University	13.0%
15f A staff training programme needs to be delivered	12.9%
14a A lack of information about the proposed new approach	12.4%
14d There is a lack of evidence to support the benefits of the proposed change	12.3%
16b Consultation with the range of stakeholders (including university and health service staff) is lacking	11.8%
16e The extent of the change from the existing curriculum is too great	9.2%
15b The potential benefits of the change are not worth its cost in time and resources required to implement it	8.4%
14j It is not possible to evaluate, in the short term, the benefits of the change	8.2%
14h The change is not in line with national guidelines or recommendations	6.5%
14i The change is not in line with the accreditation process for the school	6.2%
14g There are cultural differences that might influence the implementation of the new approach;	6.1%
13c A bad experience of previous change efforts by members of the institution	4.6%
13d A lack of support from students for change in the curriculum	3.6%

Table C: All responses to the statements ranked by mean

Statement	Mean
16g The teacher's work in the field is not incentivised, valued or rewarded	3.53
16h There are conflicting interests for the teacher between research and/or clinical care	3.53
15d Implementing the change will increase staff workload	3.44
14e Teachers do not have sufficient experience and are not trained to implement the new approach	3.40
14c Teachers are not convinced that the change will be an improvement on the current approach	3.40
13b A conservatism, rigidity and reluctance to change	3.35
14b Staff do not have a clear vision of the change	3.33
15c Planning the change will increase staff workload	3.28
15a Fewer resources to support new education initiatives are available at a time of financial restraint	3.28
15e The skills needed to implement the change are lacking	3.19
13a Satisfaction or contentment with the current, traditional or established approach to the curriculum. The need for change is not recognised	3.06
16f Commitment by staff to their teaching responsibilities is lacking. Staff do not have a sense of personal responsibility for improving education	3.05
16i The process of change in the institution is too bureaucratic	3.03
14f The majority of staff do not want change	3.02
15f A staff training programme needs to be delivered	2.94
14a A lack of information about the proposed new approach	2.94
14d There is a lack of evidence to support the benefits of the proposed change	2.91
16a An appropriate decision-making process to agree and implement change is lacking	2.82
16b Consultation with the range of stakeholders (including university and health service staff) is lacking	2.74
16e The extent of the change from the existing curriculum is too great	2.73
15b The potential benefits of the change are not worth its cost in time and resources required to implement it	2.68
14j It is not possible to evaluate, in the short term, the benefits of the change	2.62
16c There is a lack of support for change from the University	2.48
16d There is a lack of support by the dean or senior decision-makers in the medical school	2.41
14g There are cultural differences that might influence the implementation of the new approach;	2.38
13c A bad experience of previous change efforts by members of the institution	2.35
13d A lack of support from students for change in the curriculum	1.97
14h The change is not in line with national guidelines or recommendations	1.94
14i The change is not in line with the accreditation process for the school	1.93

Appendix 6 – Mapping of curriculum trends to Bologna dimensions

Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
The Graduate Doctor			
12.a. The curriculum has well defined and easily accessible learning outcomes which are communicated to the students and teachers	4. Student Centred Learning	4.1 Curriculum reform – development of learning outcomes	1; 2; 4; 8; 16.
12.b. Decisions about the curriculum with regard to course content, the teaching methods and assessments are based on the stated learning outcomes.	4. Student Centred Learning	4.1 Curriculum reform – development of learning outcomes	1; 8; 16.
12.c. Learning outcomes are harmonized across medical schools in the same country.	5. Readable and Comparable Degrees	5.4. Learning Outcome Based Curriculum 5.5. National and European Qualification Frameworks	1; 6; 16
12.d. Learning outcomes are harmonized across medical schools in Europe while, at the same time, respecting cultural and individual differences between schools.	5. Readable and Comparable Degrees 7. International Openness	5.4. Learning Outcome Based Curriculum 5.5. National and European Qualification Frameworks 7.1 Higher education institutions to further internationalise activities 7.2 Enhanced policy dialogue and cooperation based on partnership with other regions of the world	23
12.e. The curriculum emphasises the importance of attitudes and professionalism in the doctor as well as the acquisition of knowledge and the development of skills.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	1; 2; 5; 11; 21; 22.
12.f. Learning outcomes include communication skills.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	1; 8; 9
12.g. The curriculum equips the student with the ability of critical thinking including making inferences, building arguments, and making sense of what is observed and expressed.	4. Student Centred Learning	4.2 Empowering individual learners 4.5 Learner-centred curriculum	4; 7; 8; 25.
12.h. The curriculum equips the students with the ability to evaluate evidence presented in publications and reports of research studies.	3. Education Research and Innovation	3.1 Number of people with research competences should increase.	5; 8; 14; 25
12.i. The curriculum equips medical students with research skills and provides them with opportunities to undertake small scale research projects.	3. Education Research and Innovation	3.1 Number of people with research competences should increase.	14; 25.
12.j. The curriculum equips medical students with the IT skills that will allow them to retrieve and acquire knowledge whenever and wherever needed.	4. Student Centred learning	4.2 Empowering individual learners	4; 8; 13.
13.a. The curriculum prepares the students with the skills to report, analyse and prevent medical errors.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	
13.b. The curriculum equips students with the ability to prescribe drugs.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	1
13.c. Graduates from the medical school are trained to collaborate and cooperate effectively in teams.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	
13.d. The curriculum promotes health promotion as an important learning outcome.	4. Student Centred Learning	4.3 New approaches to teaching and learning	1
13.e. The curriculum provides opportunities for medical students to learn about the functioning of the health care system including health economics.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	22
13.f. Expected learning outcomes include an understanding of complementary or alternative medicine.	4. Student Centred Learning	4.3 New approaches to teaching and learning	

Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
13.g. The graduate of the medical school is equipped with skills in teaching.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	25
13.h. The curriculum prepares students with the skills expected of global citizens.	2. Employability	2.1 Advanced knowledge, skills and competences for professional lives	23
13.i. The curriculum develops students' ability to assess their own competence.	4. Student Centred learning	4.2 Empowering individual learners	2; 4; 7; 8; 10; 13; 23.
13.j. The curriculum empowers students to take responsibility for their own learning and equips them for their life-long learning.	4. Student Centred learning	4.2 Empowering individual learners	2;4; 7; 8; 10; 13; 14.
The Student			
14.a. There are an increased number of students admitted to medical schools to study medicine.	1. Lifelong learning	1.2 Accessibility	22
14.b. Students admitted to study medicine are from diverse backgrounds.	1. Lifelong learning 8. Social Dimension	1.1 Widening participation. 1.2 Accessibility. 1.5 Flexible learning paths. 1.6 Part-time studies. 1.7 Work-based routes. 1.8 Recognition of prior learning. 8.1 Student body should reflect the diversity of Europe's populations. 8.2 Equal opportunities to quality education. 8.3 Widening participation from underrepresented groups and adequate conditions for the completion of their studies. 8.4 Removing all barriers to study. 8.5 Creating appropriate economic conditions for students to be able to benefit from study opportunities at all levels. 8.6 Measurable targets for widening participation.	23
14.c. Students admitted to study medicine have a first degree in another area.	1. Lifelong Learning	1.8 Recognition of prior learning	
14.d. Students admitted have a high level of literacy in information technology and expectation with regard to the use of technology in their learning.	2. Employability 4, Student Centred Learning	2.1 Advanced knowledge, skills and competences for professional lives 4.2 New approaches to teaching and learning	
14.e. Selection methods are used that assess a range of abilities and not just academic achievement.	1. Lifelong Learning 8. Social Dimension	1.1 Widening participation 1.2 Accessibility 1.8 Recognition of prior learning 8.3 Widening participation from underrepresented groups and adequate conditions for the completion of their studies. 8.4 Removing all barriers to study	
15.a. Attention is paid to student's health and wellbeing.	4, Student Centred Learning	4.4 Effective support and guidance structures 4.7 More individually tailored education paths	18

Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
15.b. Students have opportunities to go abroad for a recognized short or long term period of time as part of their undergraduate studies.	6. Mobility 7. International Openness	6.1 Increase mobility 6.2 By 2020, 20% EHEA graduates should have study or training period abroad 6.3 Opportunity for mobility in the structure of the degree programme 6.5 Flexible study paths 6.6 Full recognition of study achievements 6.7 Full portability of grants and loans Improve participation from diverse student groups 7.1 Higher education institutions to further internationalise activities 7.2 Enhanced policy dialogue and cooperation based on partnership with other regions of the world. 7.4 Transnational education should be governed by European Standards and Guidelines for quality assurance	3; 18; 19; 20; 22; 24;
15.c. Students contribute to the teaching programme as peer tutors.	2. Employability 4, Student Centred Learning	2.1 Advanced knowledge, skills and competences for professional lives 2.4 Embedded work placements 2.5 On-the-job learning 4.3 New approaches to teaching and learning	11; 18; 19; 21; 25.
15.d. Students are co-authors and collaborate in the development of learning resources.	4, Student Centred Learning	4.2, Empowering individual learners 4.4 New approaches to teaching and learning	4
15.e. The teaching and learning programme is adapted to the needs of individual students and to the rate at which they progress.	1. Lifelong learning 4, Student Centred learning 8, Social Dimension	1.5 Flexible learning paths 1.6 Part-time studies 4.6 Flexible learner paths 4.7 More individually tailored education paths 8.4 Removing all barriers to study	4; 10; 18
The Curriculum			
16.a. Electronic versions of printed medical books are used.	4, Student Centred Learning	4.3 New approaches to teaching and learning	
16.b. Courses are conducted as blended learning combining face-to-face & web-based learning opportunities.	4, Student Centred Learning	4.3 New approaches to teaching and learning	2; 4; 8; 23.
16.c. Some courses are available entirely online.	4, Student Centred Learning	4.3 New approaches to teaching and learning	
16.d. Games are used to assist medical students in their learning.	4, Student Centred Learning	4.3 New approaches to teaching and learning	
16.e. Less reliance is placed on the use of lectures.	4, Student Centred Learning	4.3 New approaches to teaching and learning	5; 7; 8.
16.f. Lecture content is available through electronic recording.	4, Student Centred Learning	4.3 New approaches to teaching and learning	
16.g. Students use simulators or devices to complement the use of real patients.	4, Student Centred Learning	4.3 New approaches to teaching and learning	13
Curriculum Trend	**Bologna Dimension**	**Bologna Sub-category**	**Case Study**
16.h. People are trained as standardised patients and used to complement work with real patients.	4, Student Centred Learning	4.3 New approaches to teaching and learning	
16.i. Virtual patients presented electronically are used.	4, Student Centred Learning	4.3 New approaches to teaching and learning	

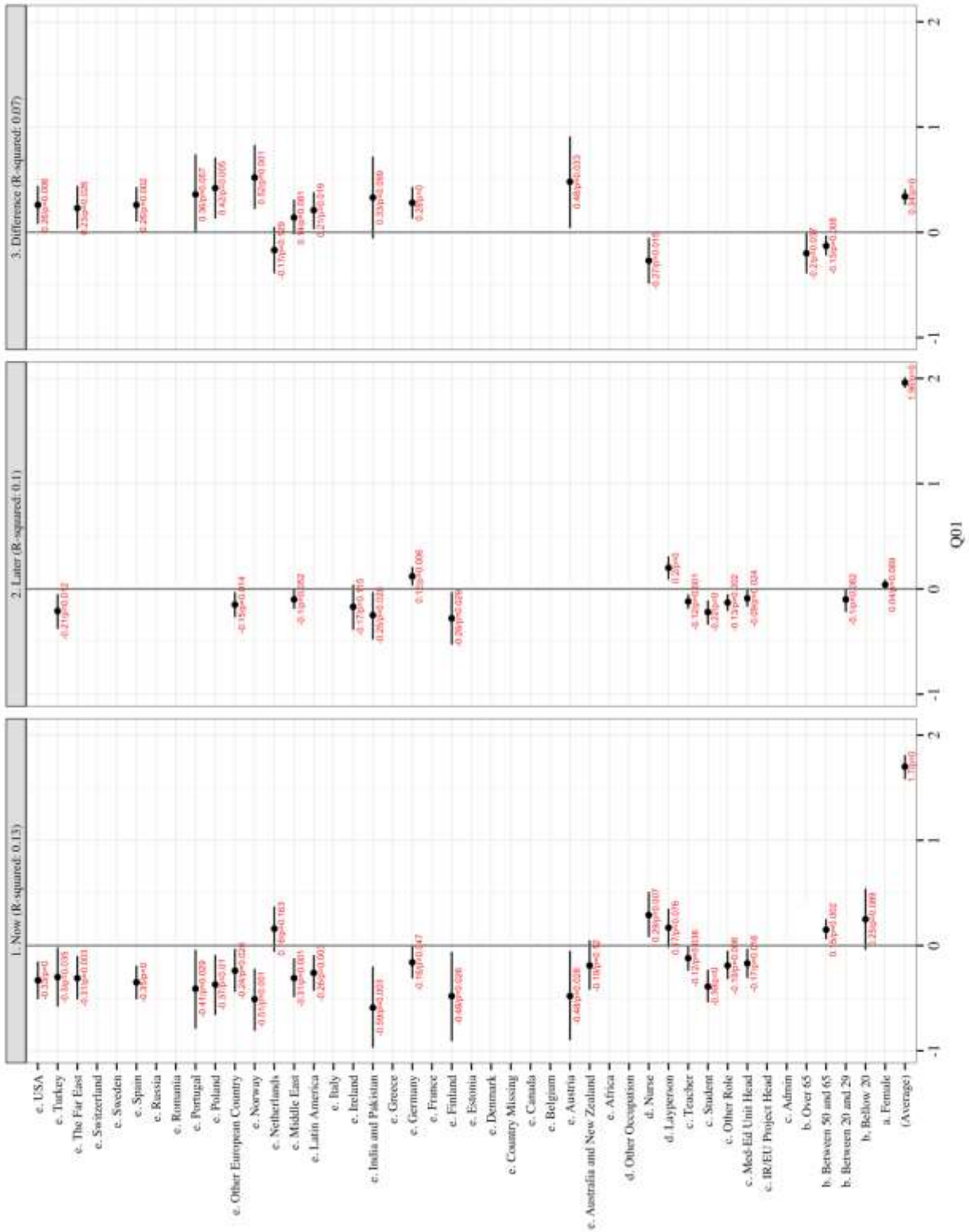
Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
16.j. Students work in small groups.	4, Student Centred Learning	4.3 New approaches to teaching and learning	2; 8; 13; 14
16.k. Students are encouraged in the curriculum to be part of or build a social network to support their learning.	4, Student Centred Learning	4.3 New approaches to teaching and learning	4; 18.
16.l. Opportunities are provided specifically to help students develop team work skills.	4, Student Centred Learning	4.3 New approaches to teaching and learning	8; 13.
17.a. Students are trained in Ambulatory care settings.	2, Employability	2.4 Embedded work placements 2.5 On-the-job training	21; 23.
17.b. Training is provided in clinical skills units.	2, Employability	2.4 Embedded work placements 2.5 On-the-job training	7, 10, 19.
17.c. Training is provided in the local community.	2, Employability	2.4 Embedded work placements 2.5 On-the-job training	21; 23.
17.d. Training is provided in a rural setting in addition to an urban setting.	2, Employability	2.4 Embedded work placements 2.5 On-the-job training	21.
17.e. Training is provided through work-based learning such as shadowing a junior doctor.	2, Employability	2.4 Embedded work placements 2.5 On-the-job training	21.
18.a. The curriculum demonstrates a planned continuum of learning with a seamless transition from undergraduate to postgraduate training.	9. Three-cycle model	9.1 General descriptors for each cycle based on learning outcomes and competences	
18.b. In addition to the core curriculum, students are provided with the opportunity to study in more depth areas of interest to them.	4, Student-centred learning	4.7 More individually tailored learner paths	3.
18.c. The curriculum adopts horizontal integration across the subjects taught in the same year or phase.	4, Student-centred learning	4.3 New approaches to teaching and learning	7.
18.d. The curriculum adopts a vertical integrated approach with courses built around themes running across different years of the curriculum.	4, Student-centred learning	4.3 New approaches to teaching and learning	1, 7, 8, 9, 14.
18.e. Students for part of the course are taught alongside students from other professions.	4, Student-centred learning	4.3 New approaches to teaching and learning	9
18.f. A problem-based approach is adopted with the learning structured around a set of problems.	4, Student-centred learning	4.3 New approaches to teaching and learning	2, 4.
19.a. Attention is paid to authentic assessment with assessment closely related to the work of a doctor.	2, Employability	2.1 Advanced knowledge, skills and competences for professional lives	10
19.b. Assessment is integrated rather than each subject being assessed independently.	5, Readable and Comparable Degrees	5.4 Learning Outcome Based Curriculum	7
19.c. Multiple Choice Questions (MCQs) are used to assess students.	4, Student Centred learning	4.3 New approaches to teaching and learning	7; 17; 23.
19.d. The Objective Structured Clinical Education (OSCE) is used as a method of student assessment.	4, Student Centred learning	4.3 New approaches to teaching and learning	7
19.e. Electronic assessment is used.	4, Student Centred learning	4.3 New approaches to teaching and learning	4; 17.

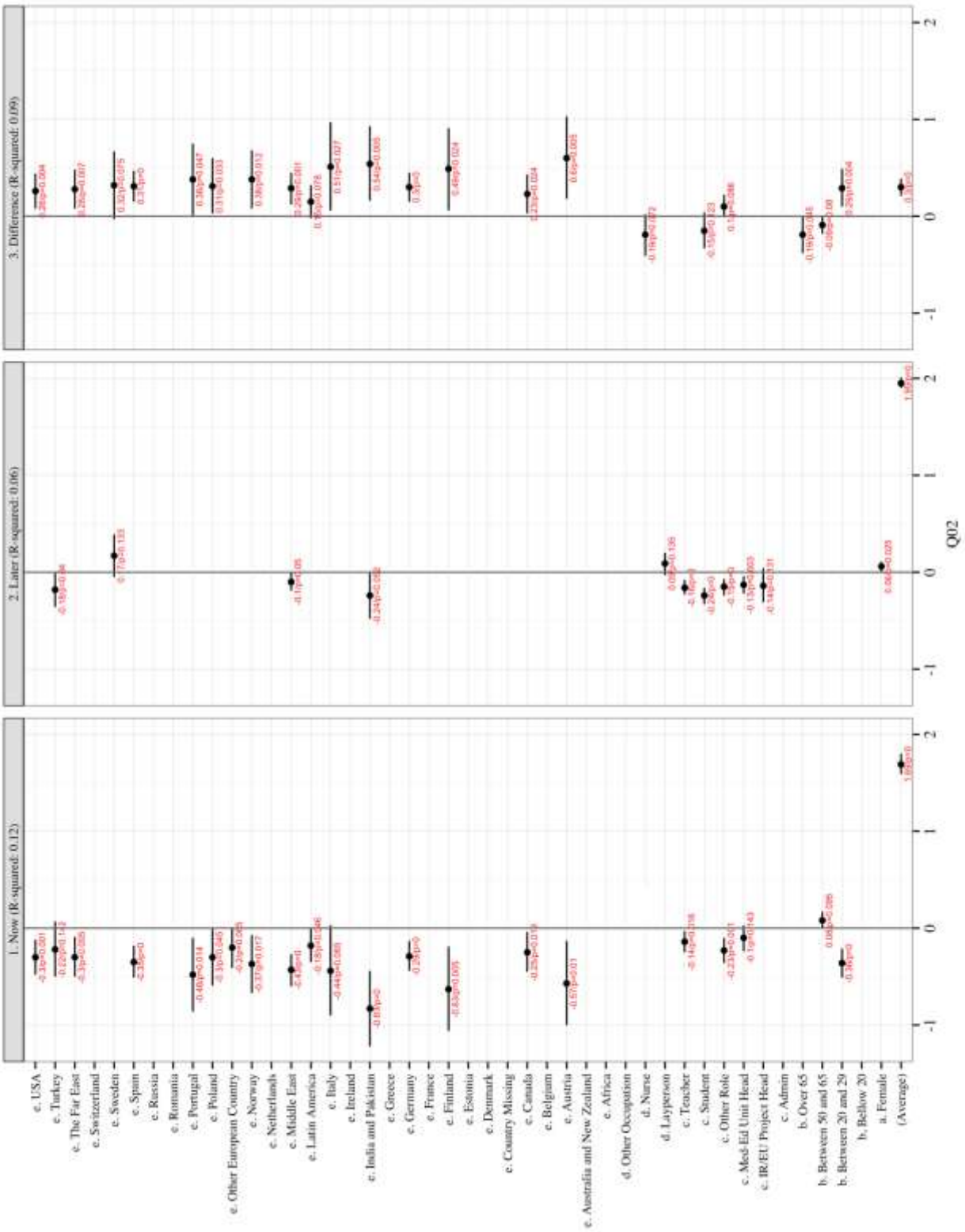
Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
19.f. Portfolios are used as a tool to assess students' competence.	4, Student Centred learning	4.3 New approaches to teaching and learning	7; 8.
19.g. Other professions as well as doctors contribute to the assessment of students.	4, Student Centred learning	4.3 New approaches to teaching and learning	
19.h. Patients contribute to the assessment or rating of the students' performance.	4, Student Centred learning	4.3 New approaches to teaching and learning	
19.i. Assessment is closely matched to the stated learning outcomes.	4, Student Centred learning 5, Readable and Comparable Degrees	4.3 New approaches to teaching and learning 5.4 Learning Outcome Based Curriculum	8; 10; 12.
19.j. There is an element of peer assessment where students assess each other.	4, Student Centred learning	4.2 Empowering individual learners 4.3 New approaches to teaching and learning	
19.k. A progress test is used.	4, Student Centred learning	4.3 New approaches to teaching and learning 4.5 Learner-centred curriculum	4.
19.l. Staff with training and experience in assessment support the assessment programme in the medical school.	4, Student Centred learning	4.3 New approaches to teaching and learning	
20.a. The curriculum is systematically and objectively evaluated.	10, Quality Assurance	10.1 Accountability	1; 2; 11
20.b. Programmes and courses are evaluated for their efficiency and cost-effectiveness.	10, Quality Assurance	10.1 Accountability	
20.c. The education environment in medical school is measured using instruments such as DREEM (Dundee Ready Education Environment Measure).	10, Quality Assurance	10.1 Accountability	
21.a. There is a committee responsible for curriculum planning.	5, Readable and Comparable Degrees	5.4 Learning Outcome Based Curriculum 5.5 National and European Qualification Frameworks	1; 7.
21.b. Students are full members of the curriculum planning committee.	2, Employability 5, Readable and Comparable Degrees	2.2 Cooperation between governments, higher education institutions, social partners and students 5.4 Learning Outcome Based Curriculum	
21.c. Members of the public are consulted in curriculum planning.	2, Employability 5, Readable and Comparable Degrees	2.3 Cooperation between governments, higher education institutions, social partners and students 5.4 Learning Outcome Based Curriculum	
21.d. Other health professionals are consulted in planning the curriculum.	2, Employability 5, Readable and Comparable Degrees	2.4 Cooperation between governments, higher education institutions, social partners and students 5.4 Learning Outcome Based Curriculum	
21.e. Recent graduates are consulted in curriculum planning.	2, Employability 5, Readable and Comparable Degrees	2.5 Cooperation between governments, higher education institutions, social partners and students 5.4 Learning Outcome Based Curriculum	

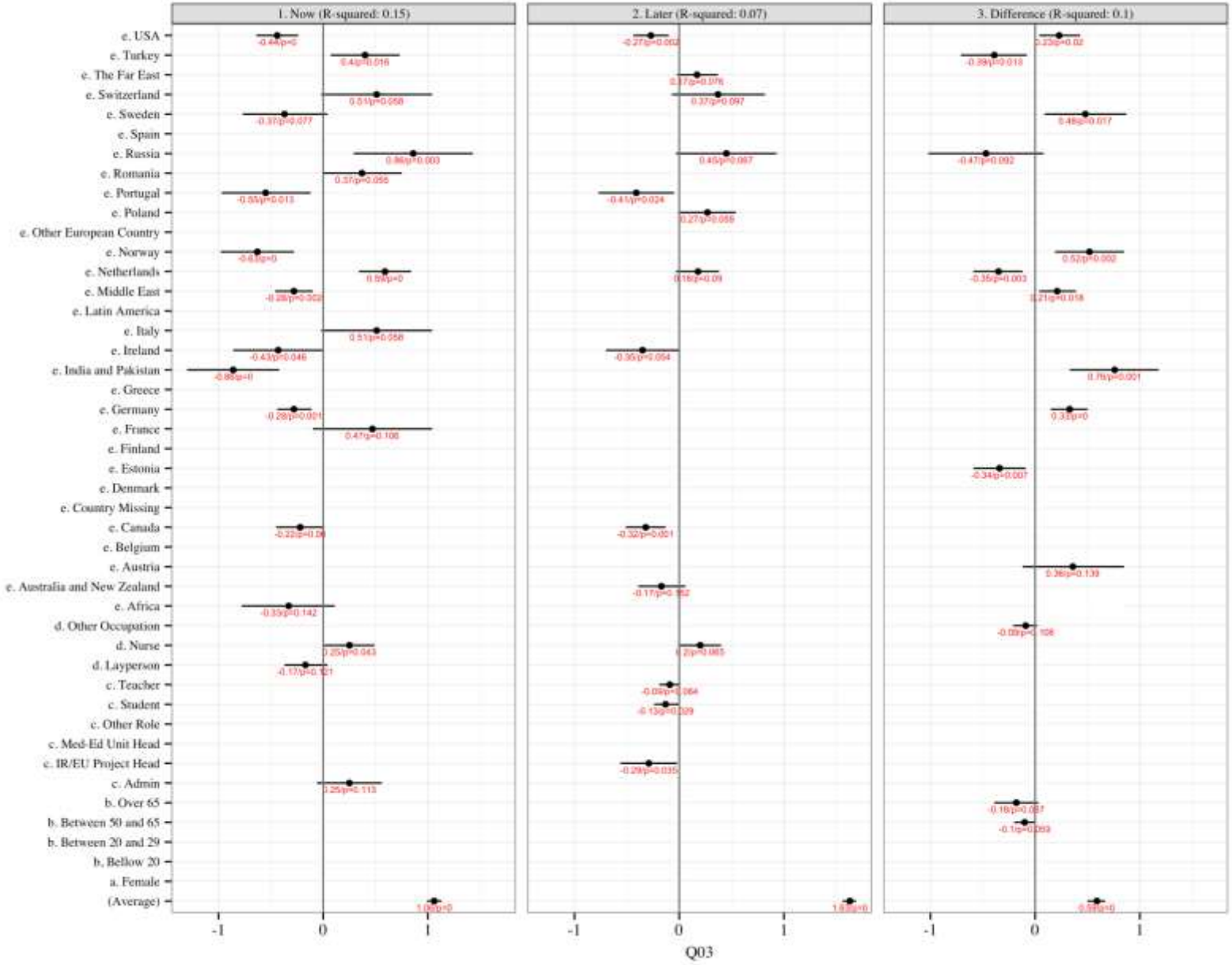
Curriculum Trend	Bologna Dimension	Bologna Sub-category	Case Study
21.f. A medical education unit or department supports the education initiative in the medical school.	4, Student-centred learning 5, Readable and Comparable Degrees	4.5 Effective support and guidance structures 5.4 Learning Outcome Based Curriculum	7.
21.g. One or more staff with specific training and expertise in education support the local education initiative.	4, Student-centred learning 5, Readable and Comparable Degrees	4.6 Effective support and guidance structures 5.4 Learning Outcome Based Curriculum	7; 15.
21.h. Decisions about the curriculum are based on an examination of the evidence reported in medical education.	4, Student-centred learning 5, Readable and Comparable Degrees	4.7 Effective support and guidance structures 5.4 Learning Outcome Based Curriculum	8.
22.a. The teaching performance of staff is evaluated with feedback given to the member of staff.	10, Quality Assurance	10.1 Accountability	15
22.b. Other healthcare professionals contribute to the teaching of medical students.	4, Student Centred Learning	3. New approaches to learning and teaching	
22.c. Professionalism in teaching is acknowledged and rewarded in the school.	2, Employability 10, Quality Assurance	2.1 Advanced knowledge, skills and competences for professional lives 2.3 Improve careers and employment related guidance services 10.1 Accountability	15
22.d. Staff members can be promoted on the basis of their performance as a teacher.	2, Employability 10, Quality Assurance	2.1 Advanced knowledge, skills and competences for professional lives 2.3 Improve careers and employment related guidance services 10.1 Accountability	
22.e. All staff members are expected to have had training in teaching.	2, Employability 10, Quality Assurance	2.1 Advanced knowledge, skills and competences for professional lives 2.3 Improve careers and employment related guidance services 10.1 Accountability	15
22.f. Programmes are in place to assist staff to keep up to date with their teaching expertise.	2, Employability 10, Quality Assurance	2.1 Advanced knowledge, skills and competences for professional lives 2.3 Improve careers and employment related guidance services 10.1 Accountability	15

Appendix 7: Visual representation of Curriculum Trends survey regression results.

The figures present the regression results both visually and numerically. The centreline denotes 0 visually highlighting if people in certain categories are lower or higher in their response or trend. The dots denote the estimates and the lines next to them highlight the 95% confidence level of that estimate.




1. Now (R-squared: 0.12)
2. Later (R-squared: 0.06)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q02


1. Now (R-squared: 0.15)
2. Later (R-squared: 0.07)
3. Difference (R-squared: 0.1)
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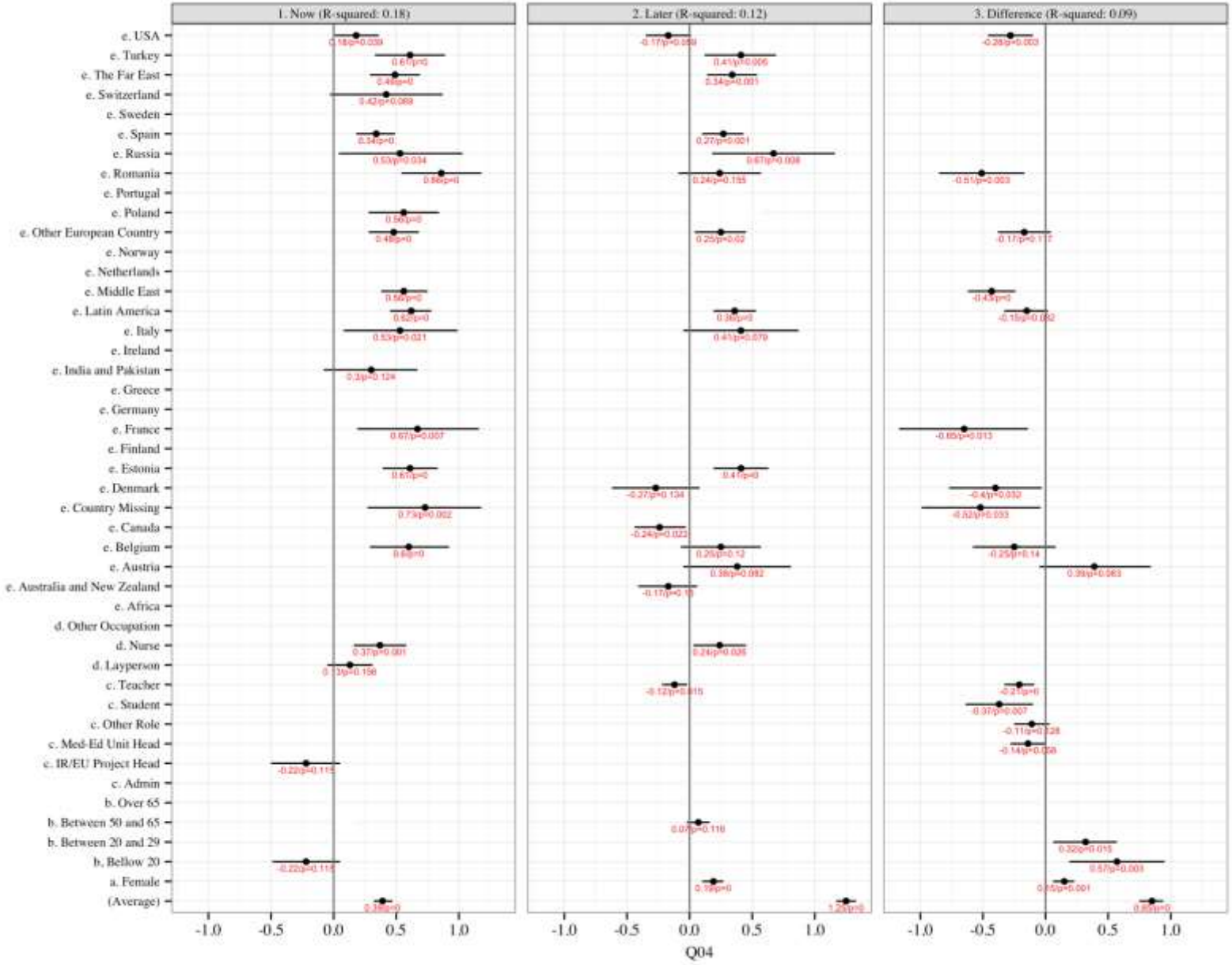
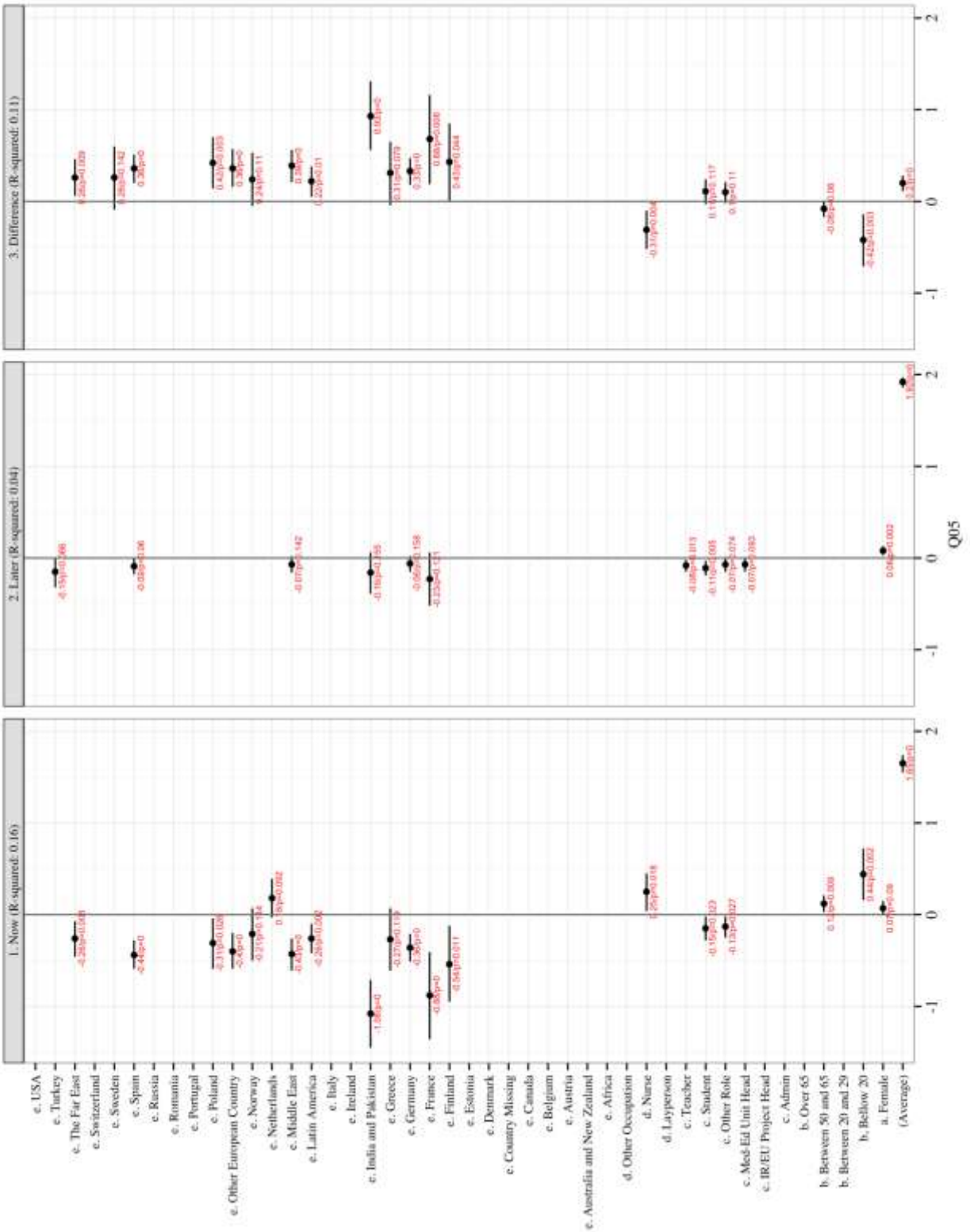
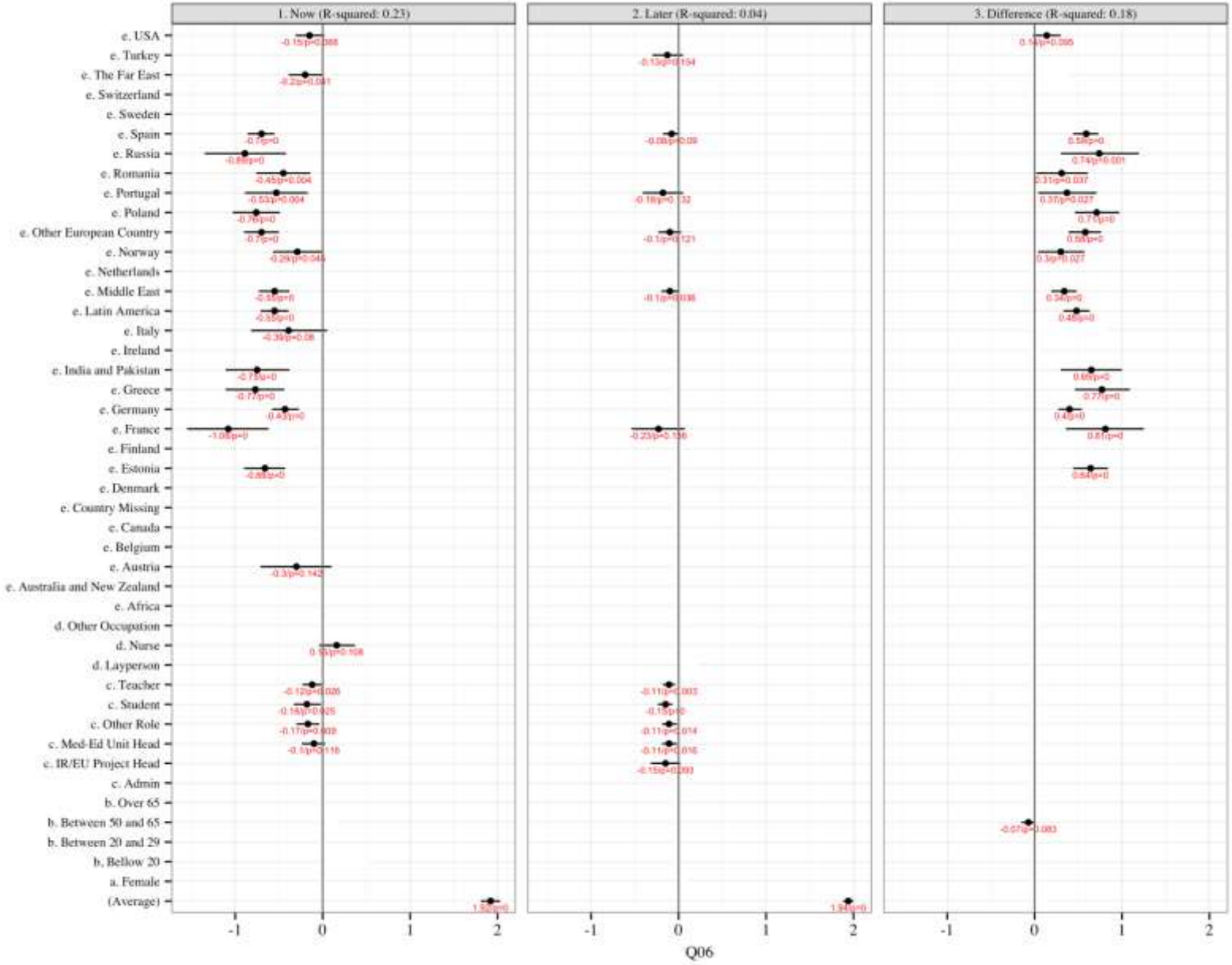
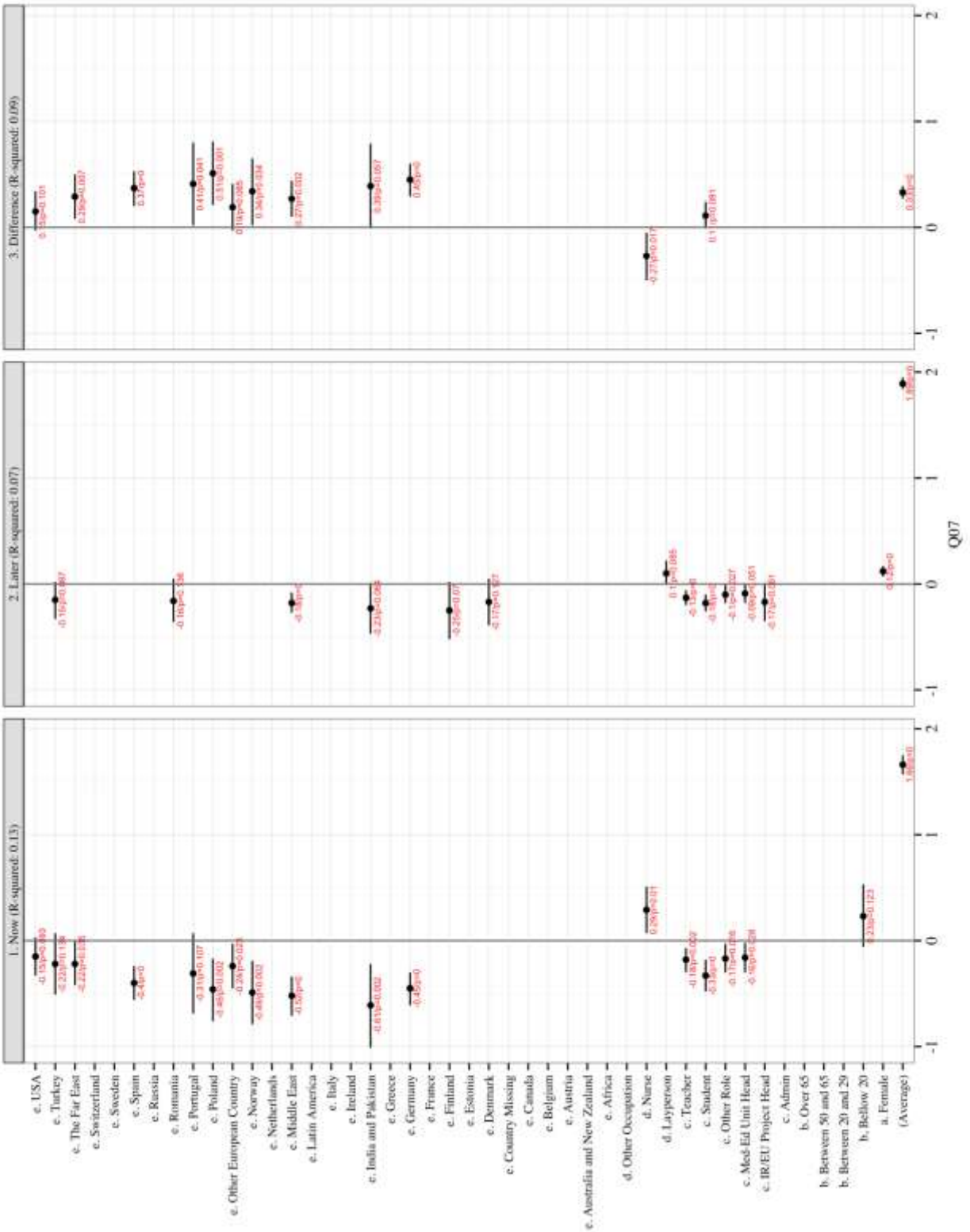
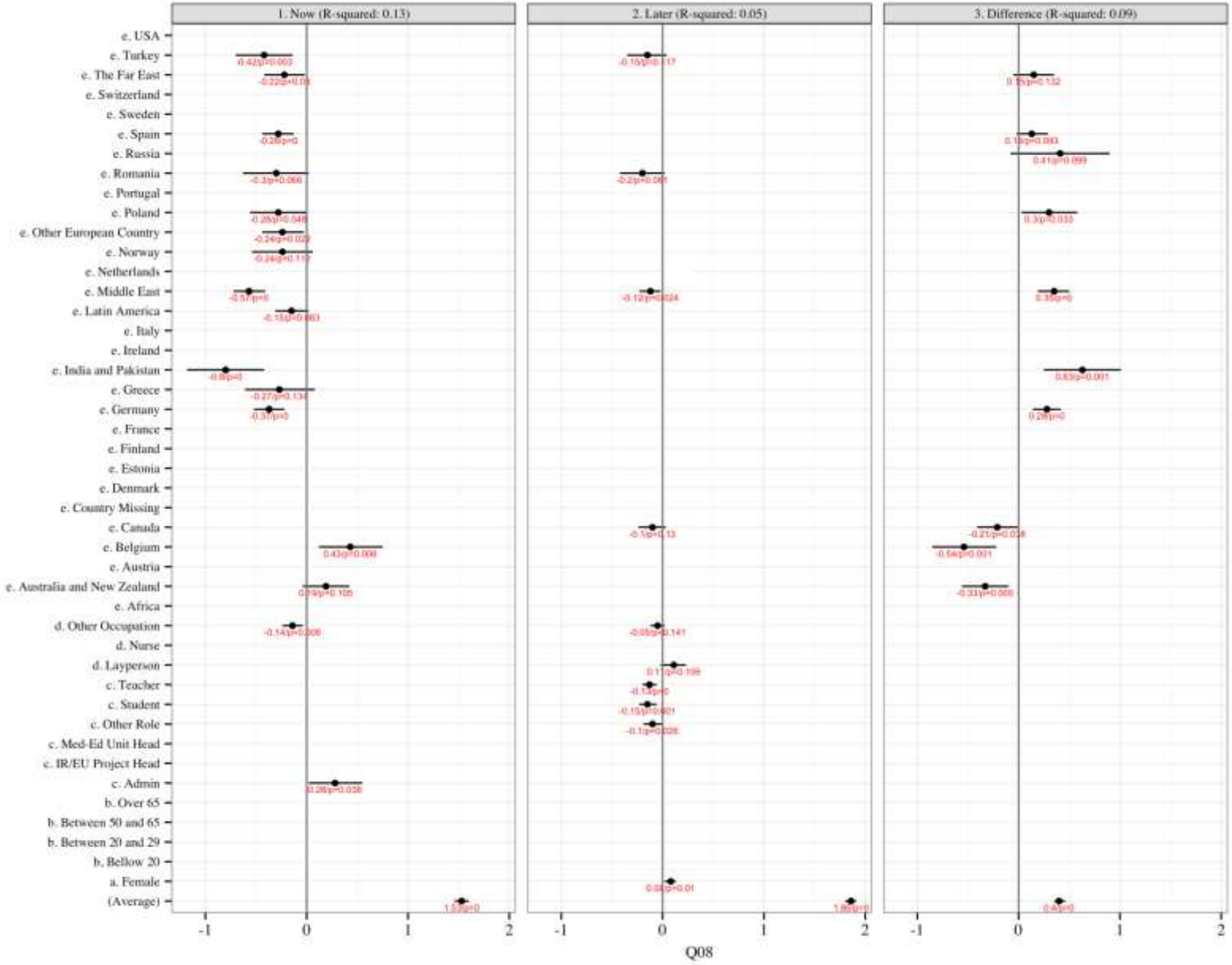
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q03

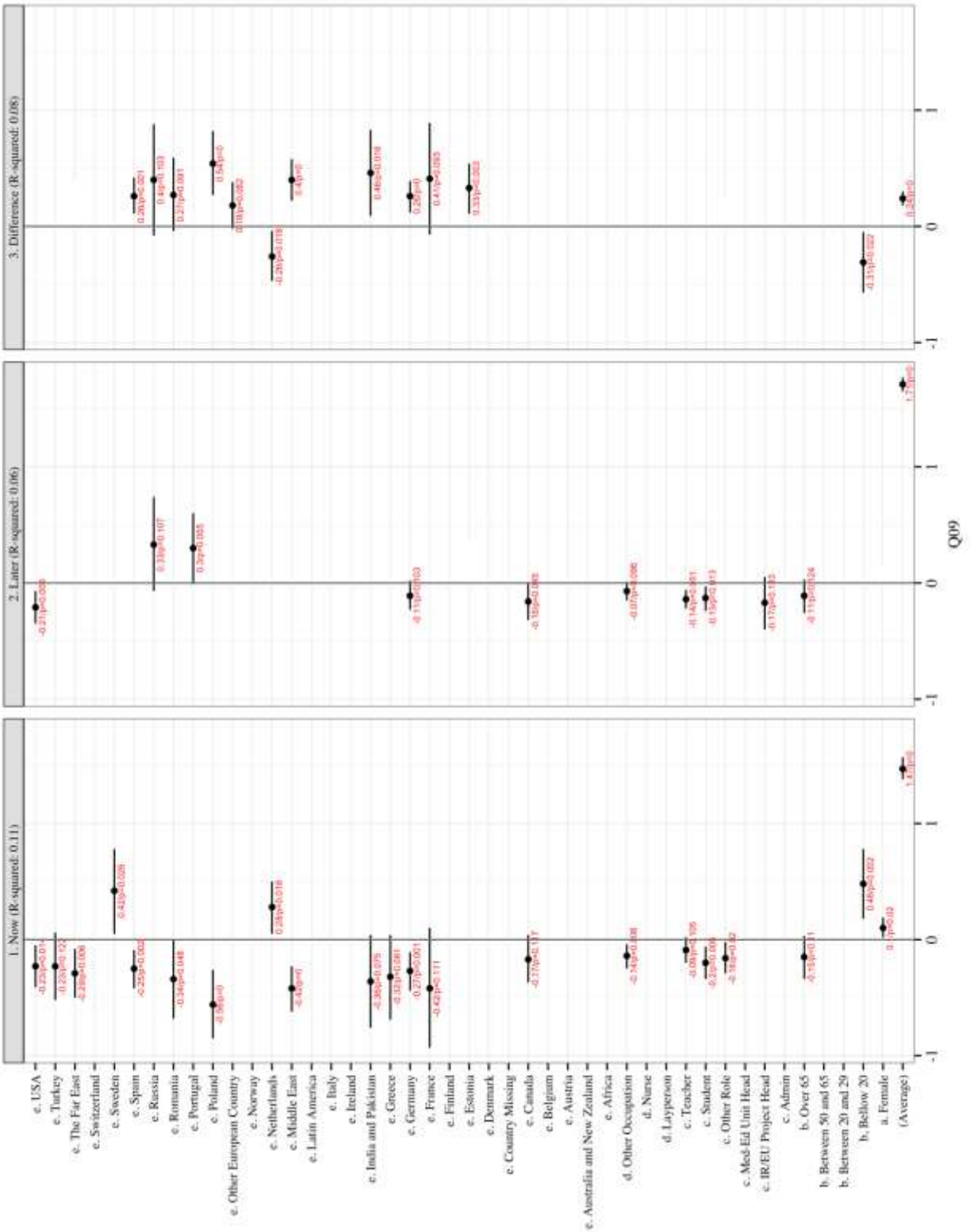

1. Now (R-squared: 0.18)
2. Later (R-squared: 0.12)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q04

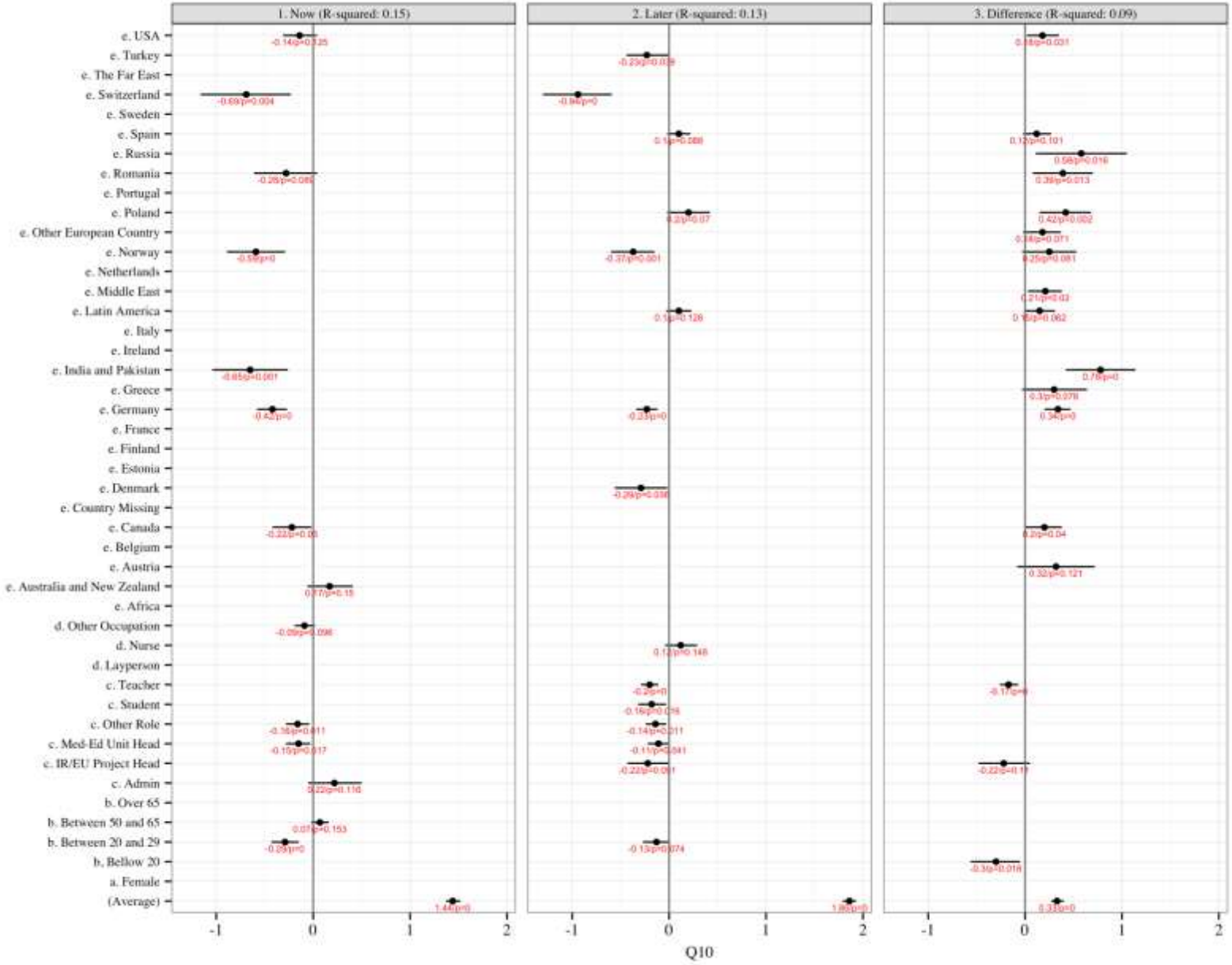

1: Now (R-squared: 0.16)
2: Later (R-squared: 0.04)
3: Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q05

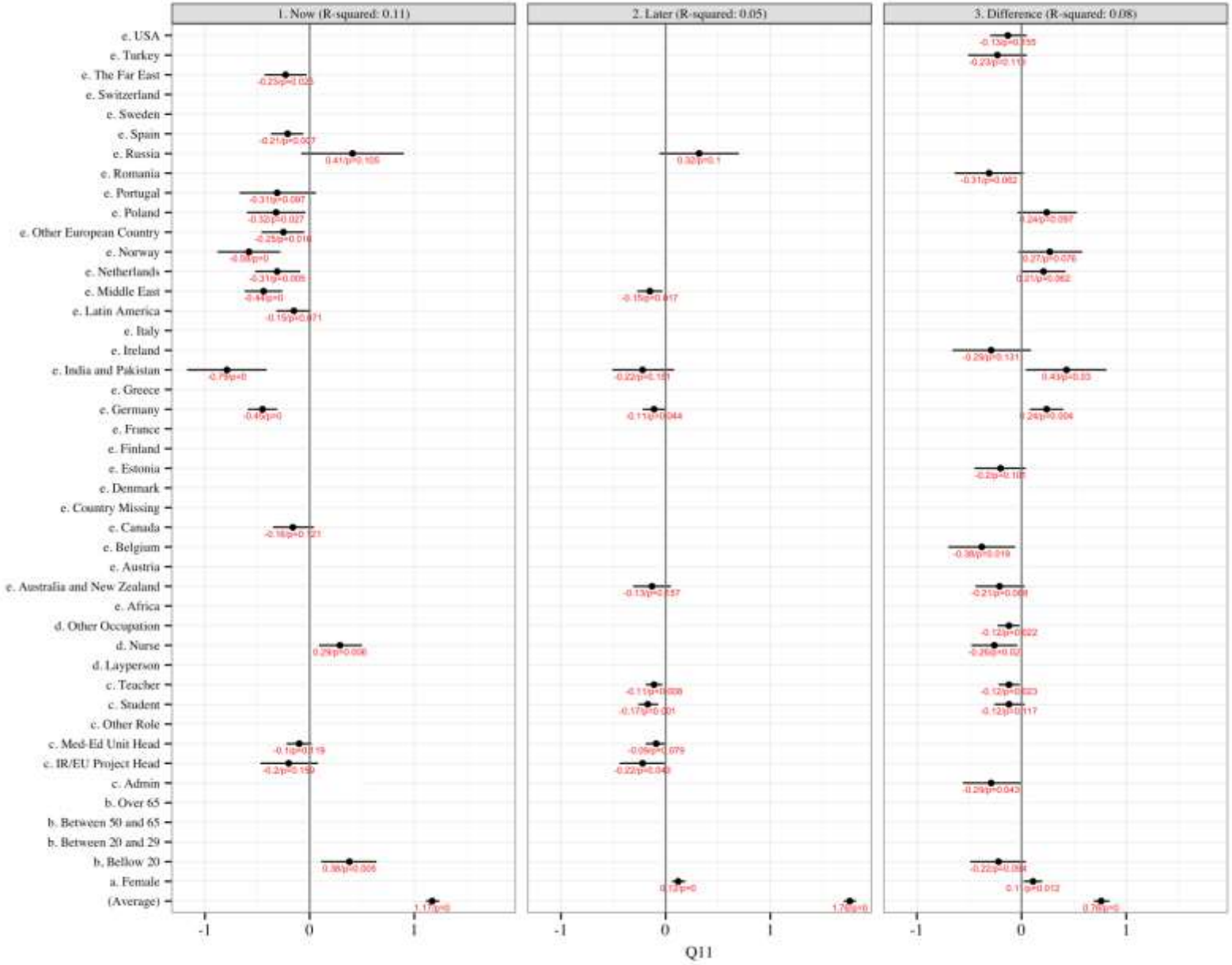

1. Now (R-squared: 0.23)
2. Later (R-squared: 0.04)
3. Difference (R-squared: 0.18)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q06

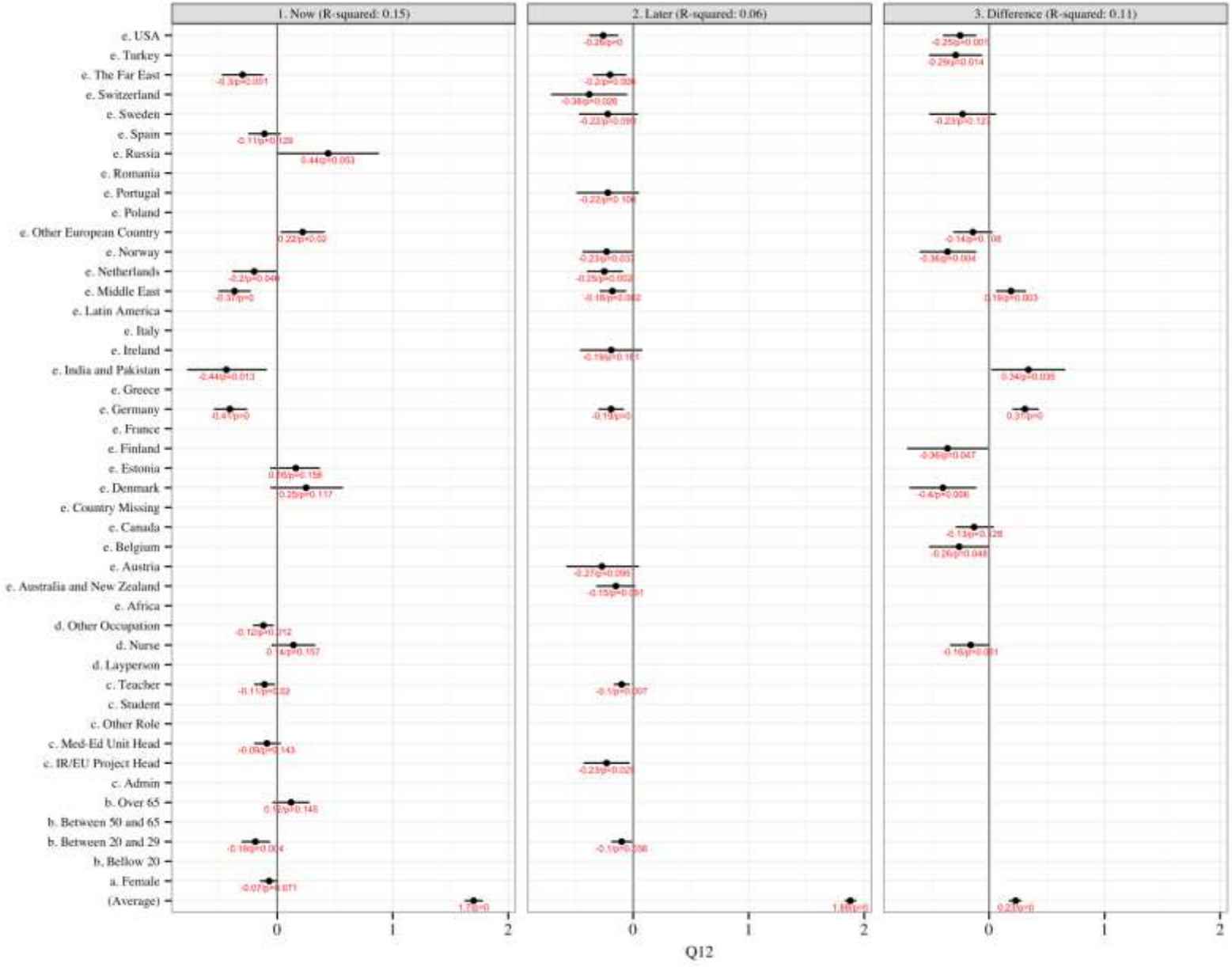

1: Now (R-squared: 0.13)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q07

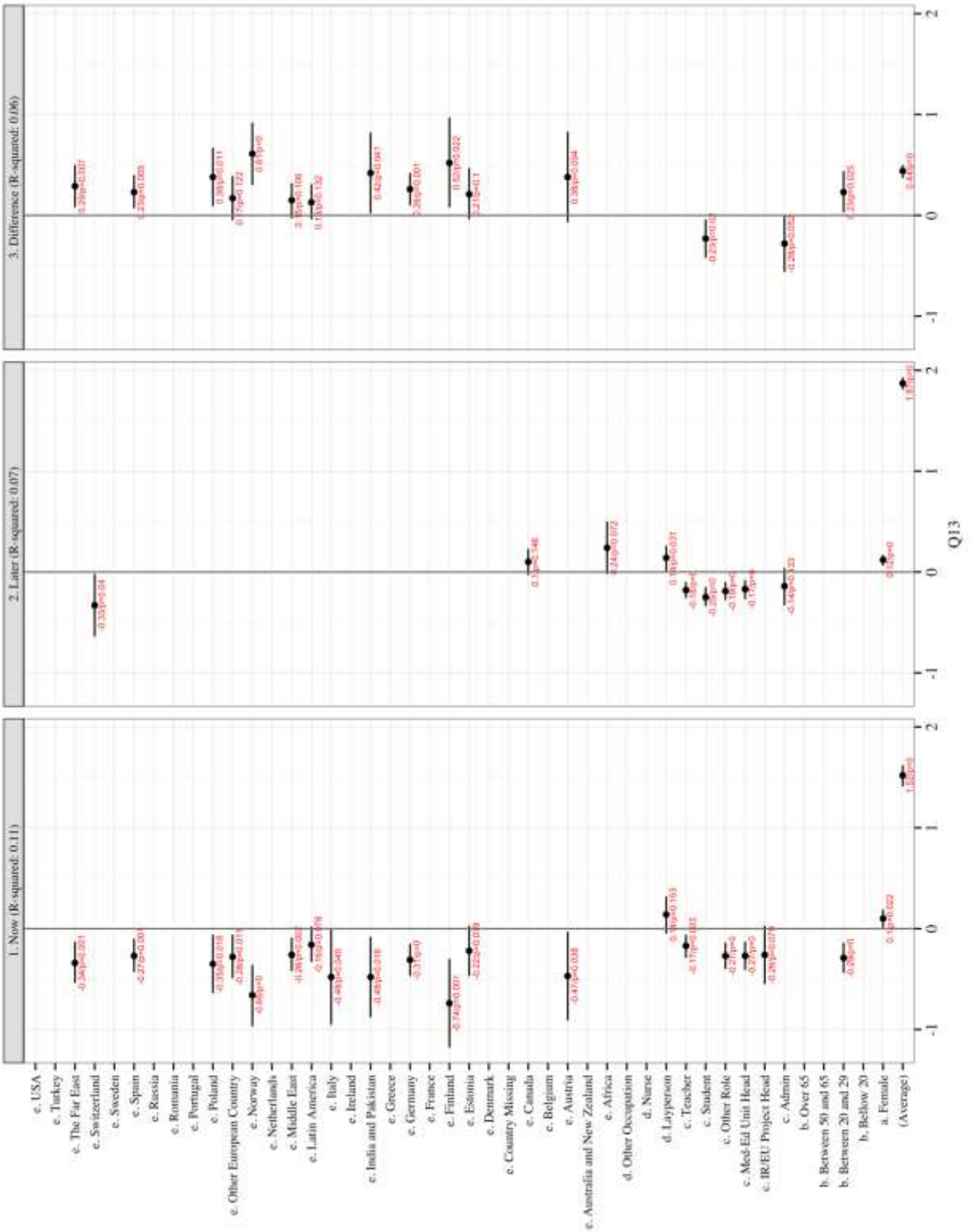

1. Now (R-squared: 0.13)
2. Later (R-squared: 0.05)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q08

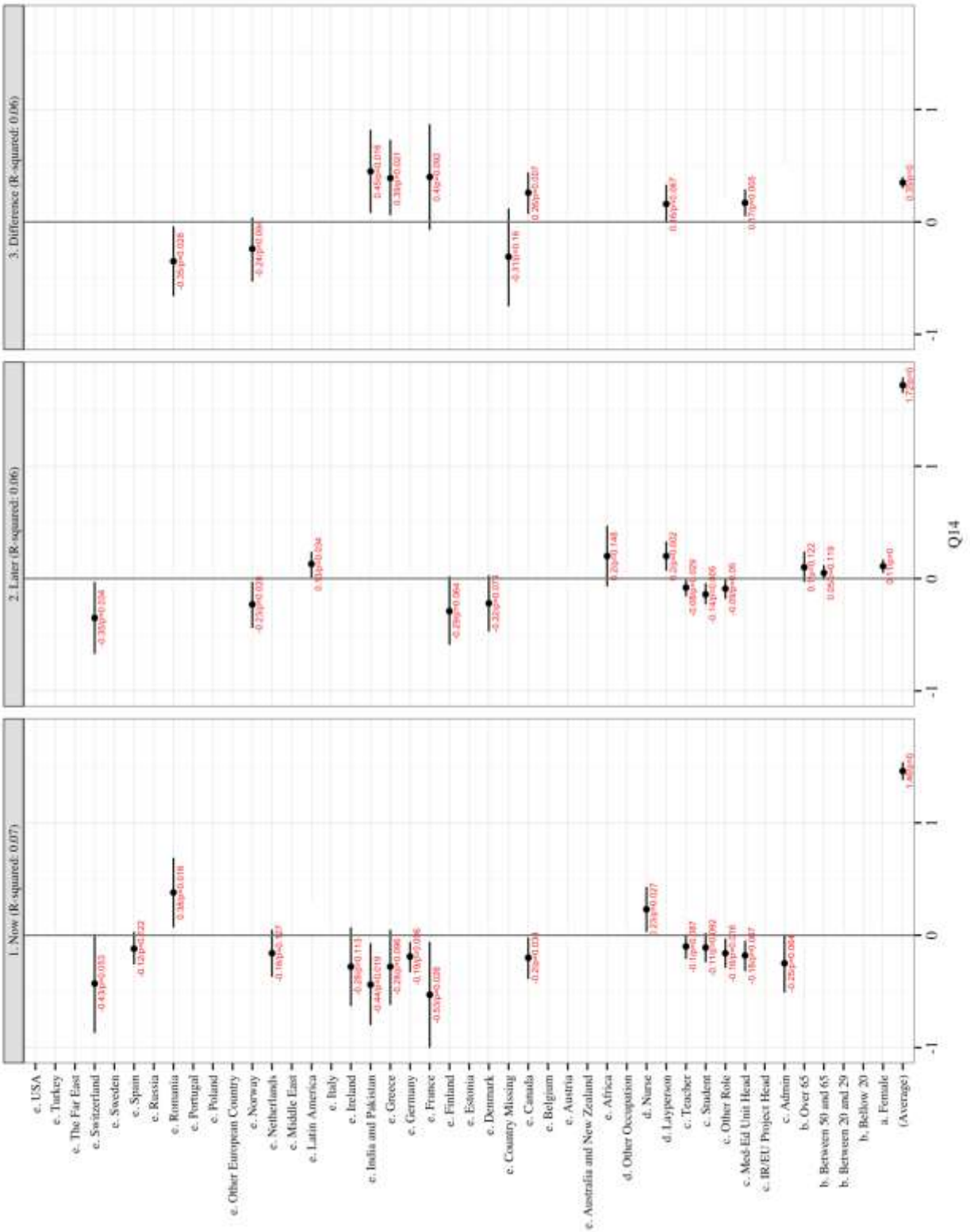

1: Now (R-squared: 0.11)
2: Later (R-squared: 0.06)
3: Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q09

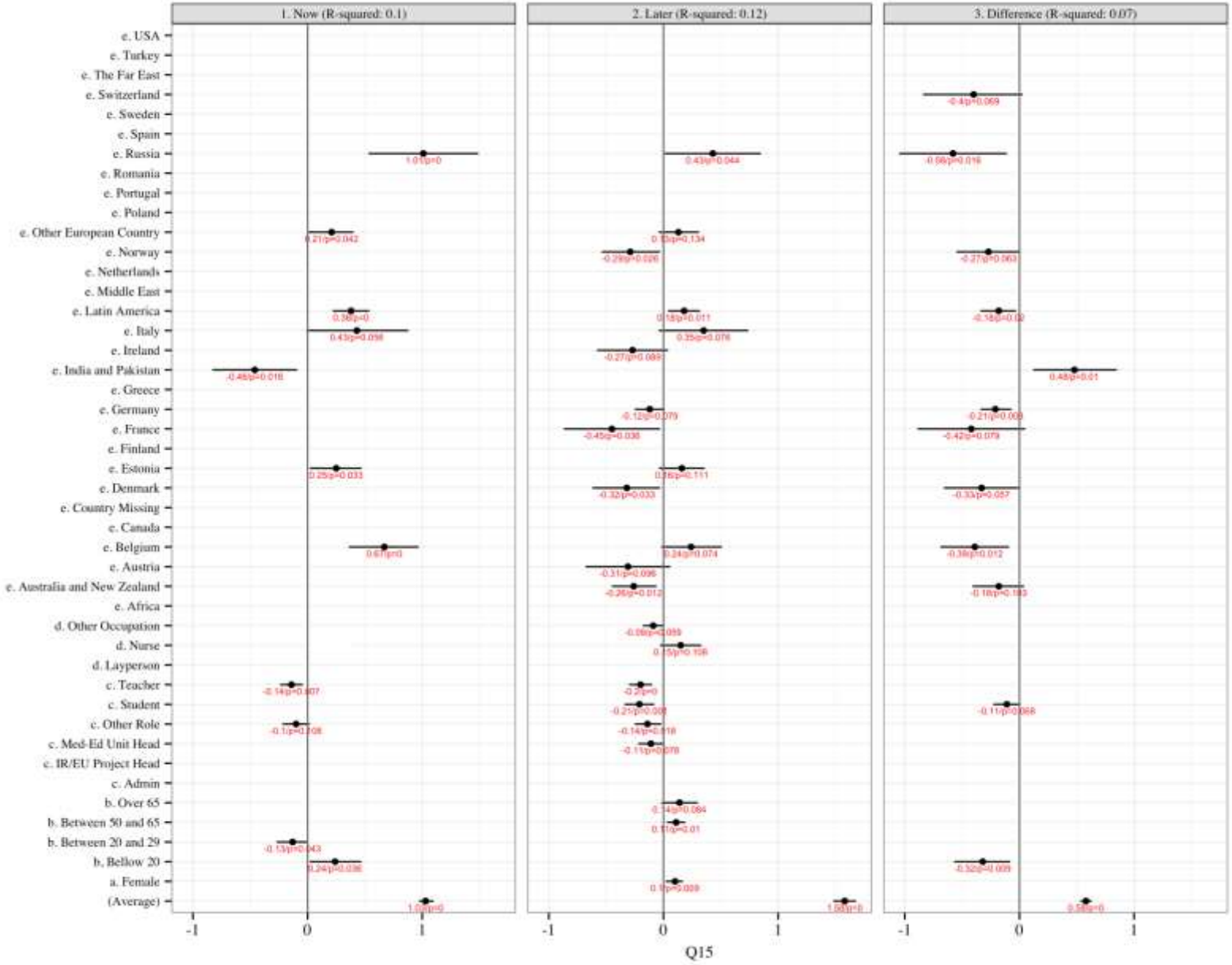

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.13)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q10


1. Now (R-squared: 0.11)
2. Later (R-squared: 0.05)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q11


1. Now (R-squared: 0.15)
2. Later (R-squared: 0.06)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
0
1
2
Q12


1: Now (R-squared: 0.11)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.06)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q13


1: Now (R-squared: 0.07)
2: Later (R-squared: 0.06)
3: Difference (R-squared: 0.06)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q14


1. Now (R-squared: 0.1)
2. Later (R-squared: 0.12)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
1.01[p=0
0.21[p=0.042
0.38[p=0
0.43[p=0.056
-0.46[p=0.018
0.25[p=0.033
0.67[p=0
-0.14[p=0.407
-0.1[p=0.208
-0.13[p=0.043
0.24[p=0.036
1.0[p=0
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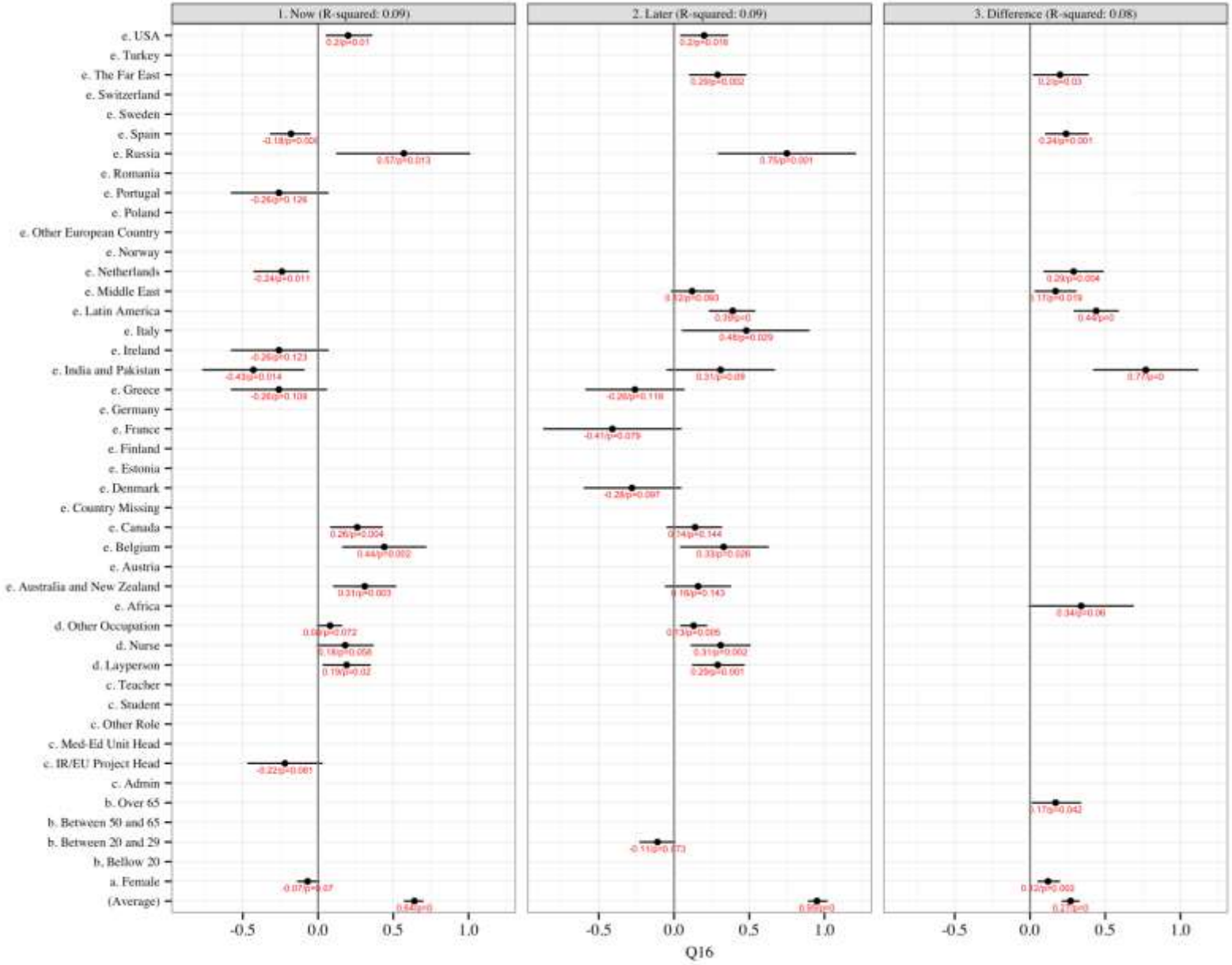
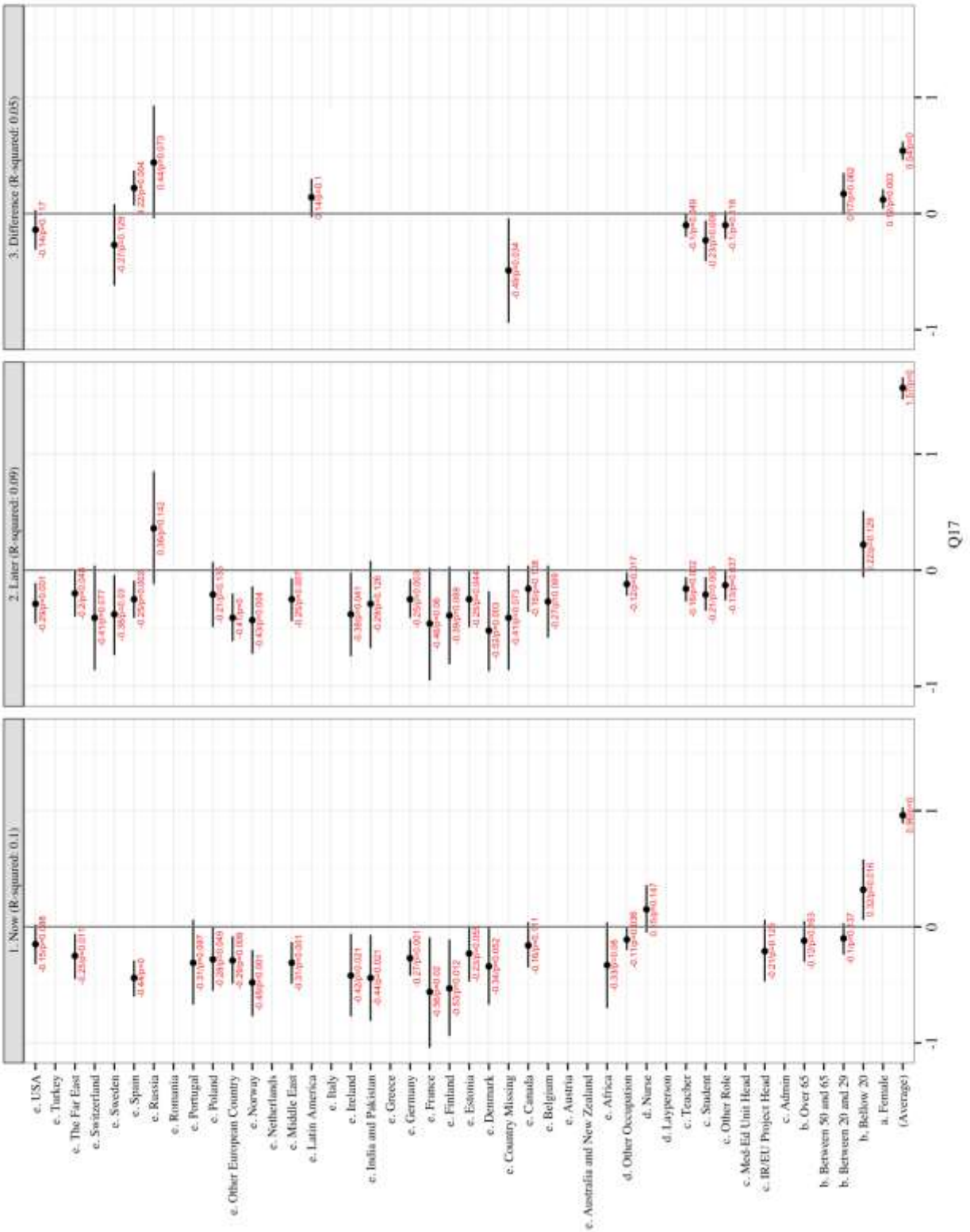
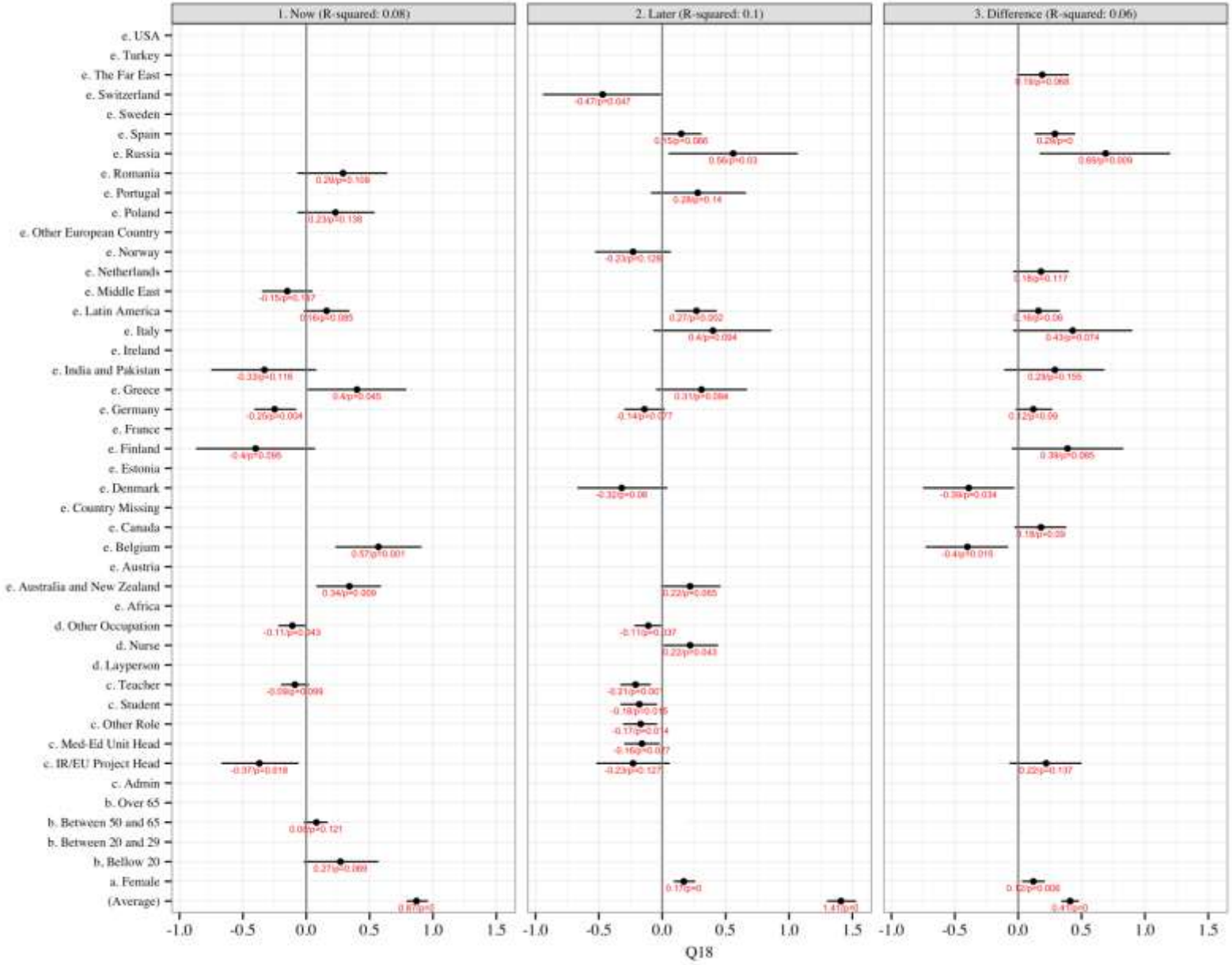
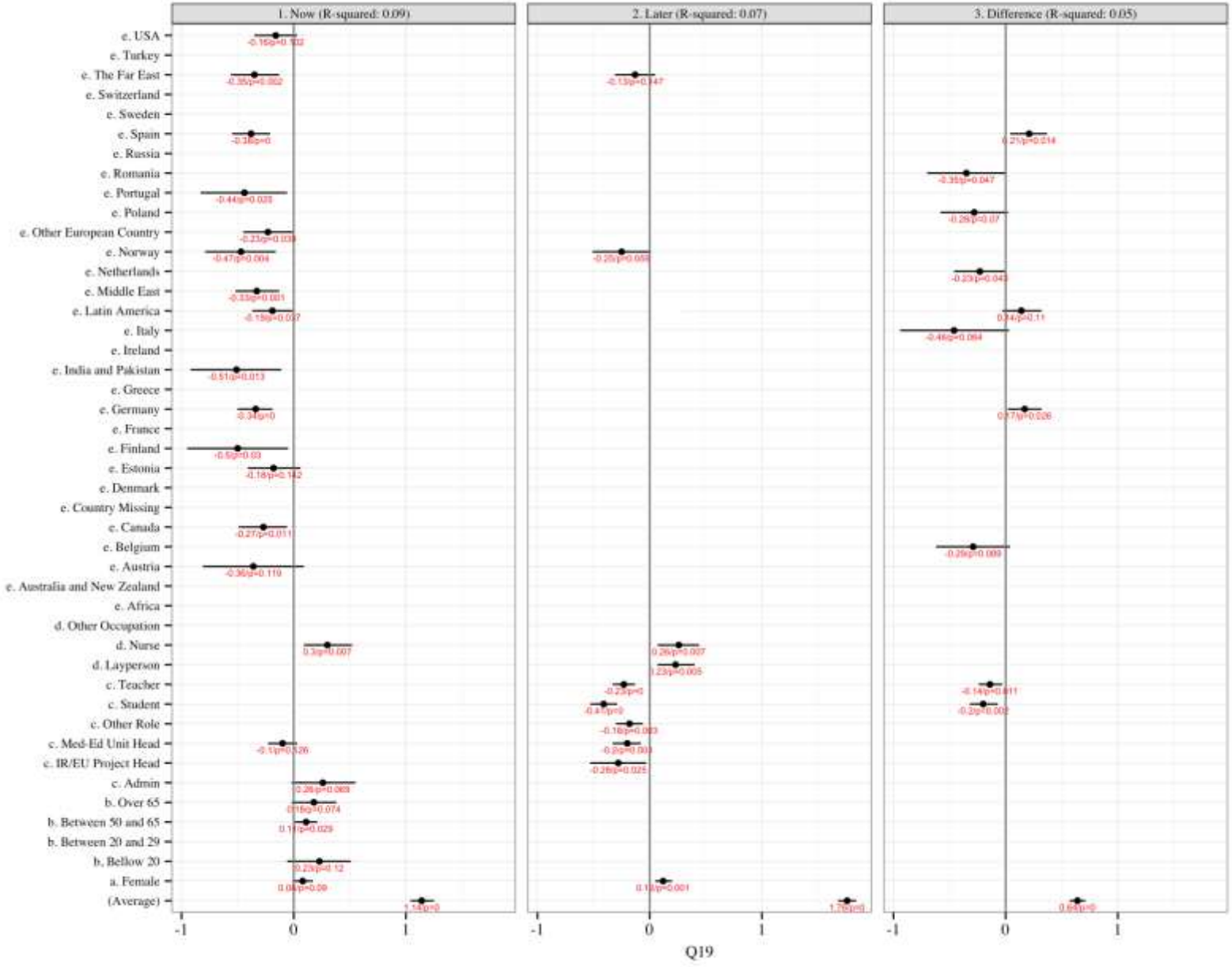
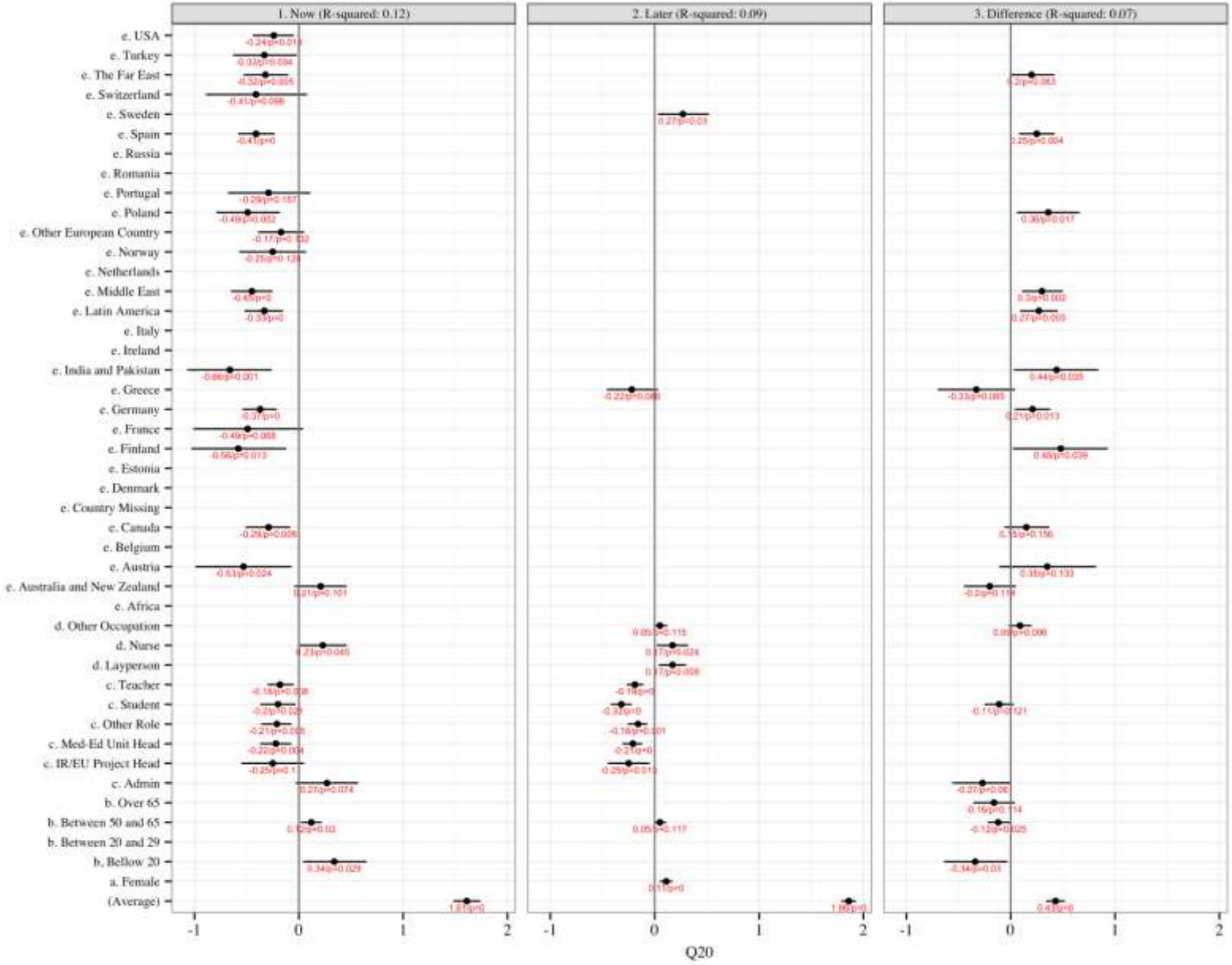
0.13[p=0.134
-0.29[p=0.026
0.18[p=0.011
0.35[p=0.076
-0.27[p=0.089
-0.12[p=0.079
-0.45[p=0.038
0.26[p=0.111
-0.32[p=0.033
0.24[p=0.074
-0.31[p=0.096
-0.26[p=0.012
-0.09[p=0.099
0.15[p=0.106
-0.21[p=0.008
-0.14[p=0.018
-0.11[p=0.078
0.14[p=0.084
0.11[p=0.01
0.1[p=0.009
1.56[p=0
-0.4[p=0.069
-0.68[p=0.016
-0.27[p=0.063
-0.18[p=0.02
0.48[p=0.01
-0.21[p=0.008
-0.42[p=0.079
-0.33[p=0.057
-0.38[p=0.012
-0.18[p=0.183
-0.11[p=0.068
-0.32[p=0.009
0.58[p=0
-1
0
1
Q15

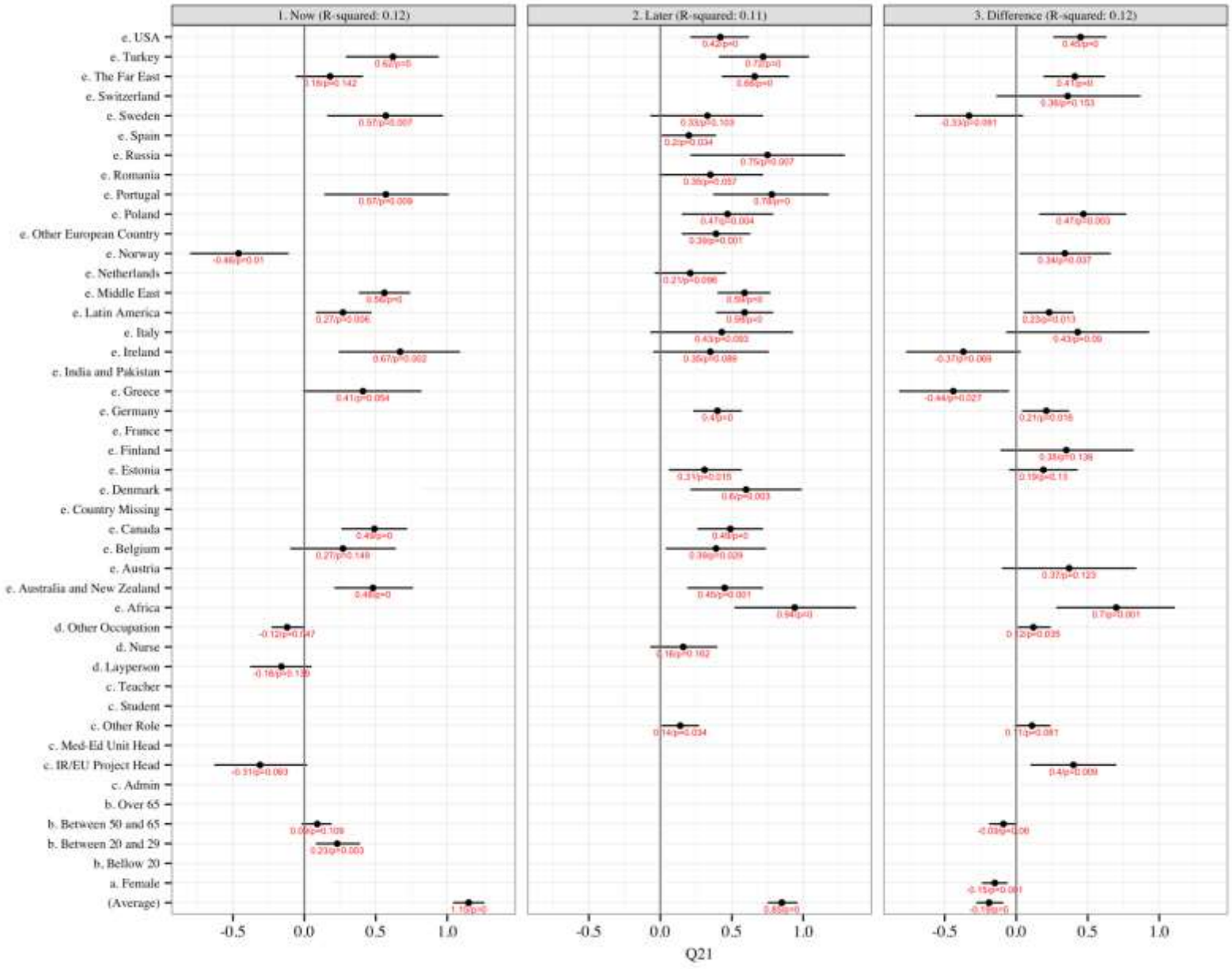

1. Now (R-squared: 0.09)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-0.5
0.0
0.5
1.0
Q16

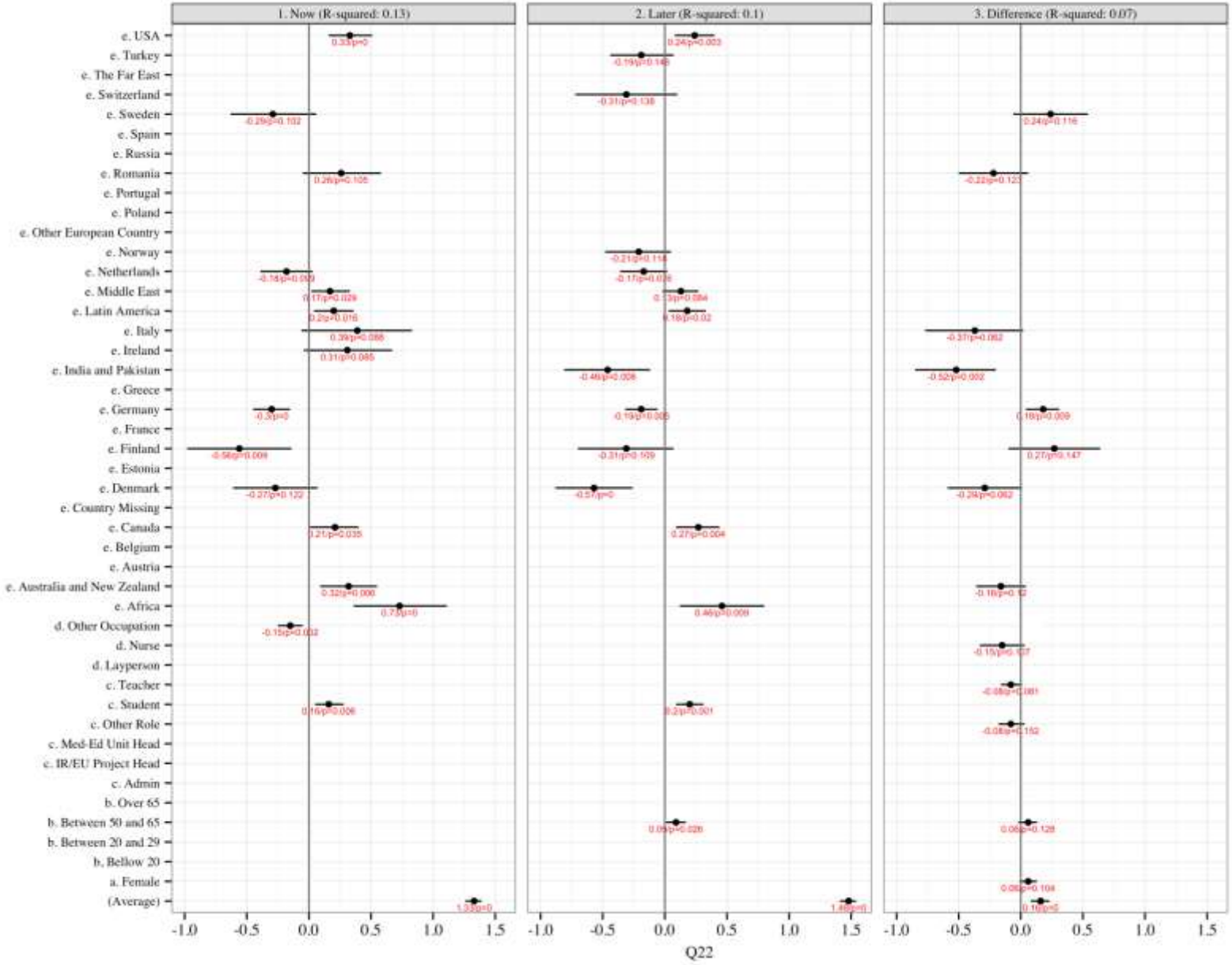

1. Now (R-squared: 0.1)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.05)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q17

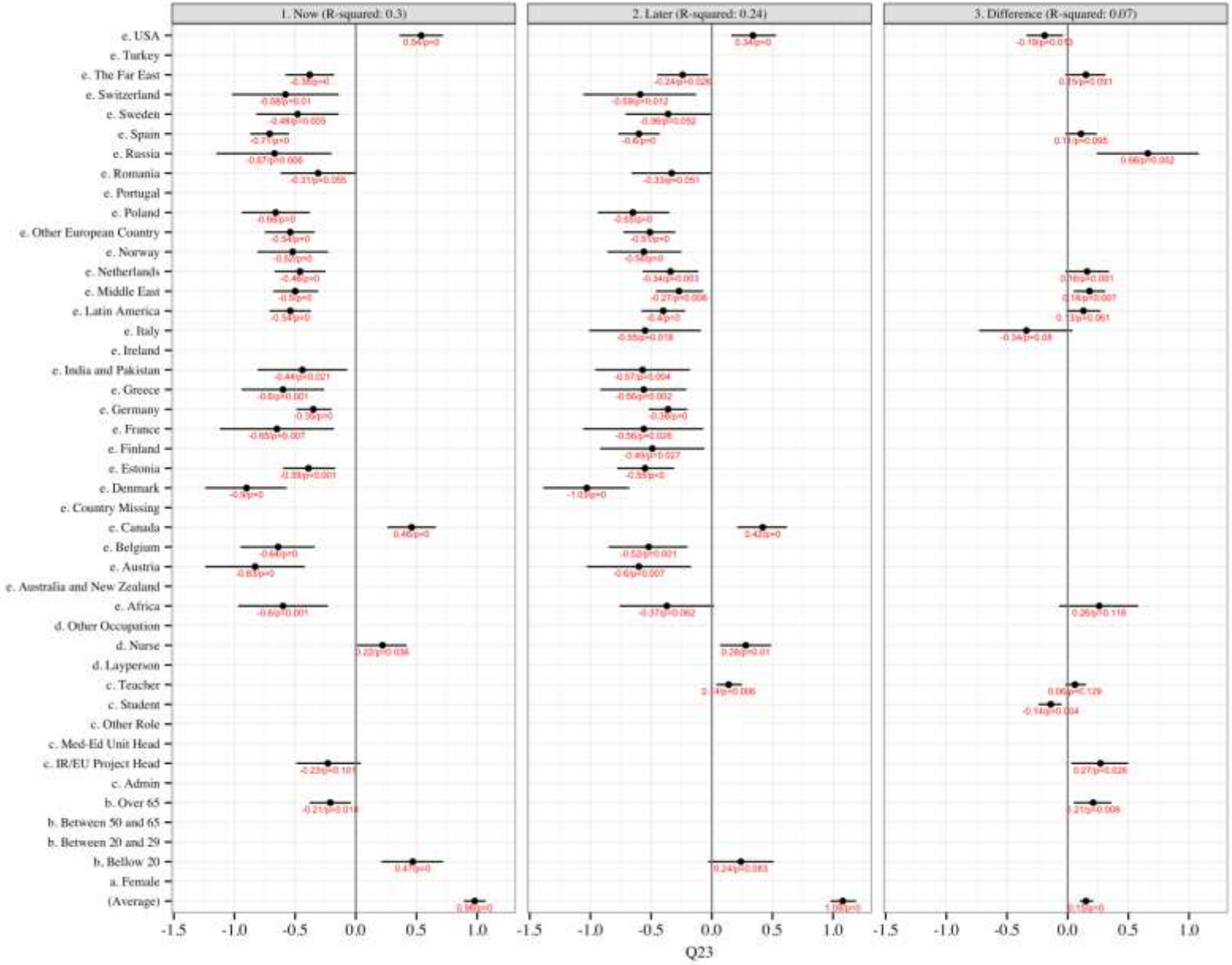

1. Now (R-squared: 0.08)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.06)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q18

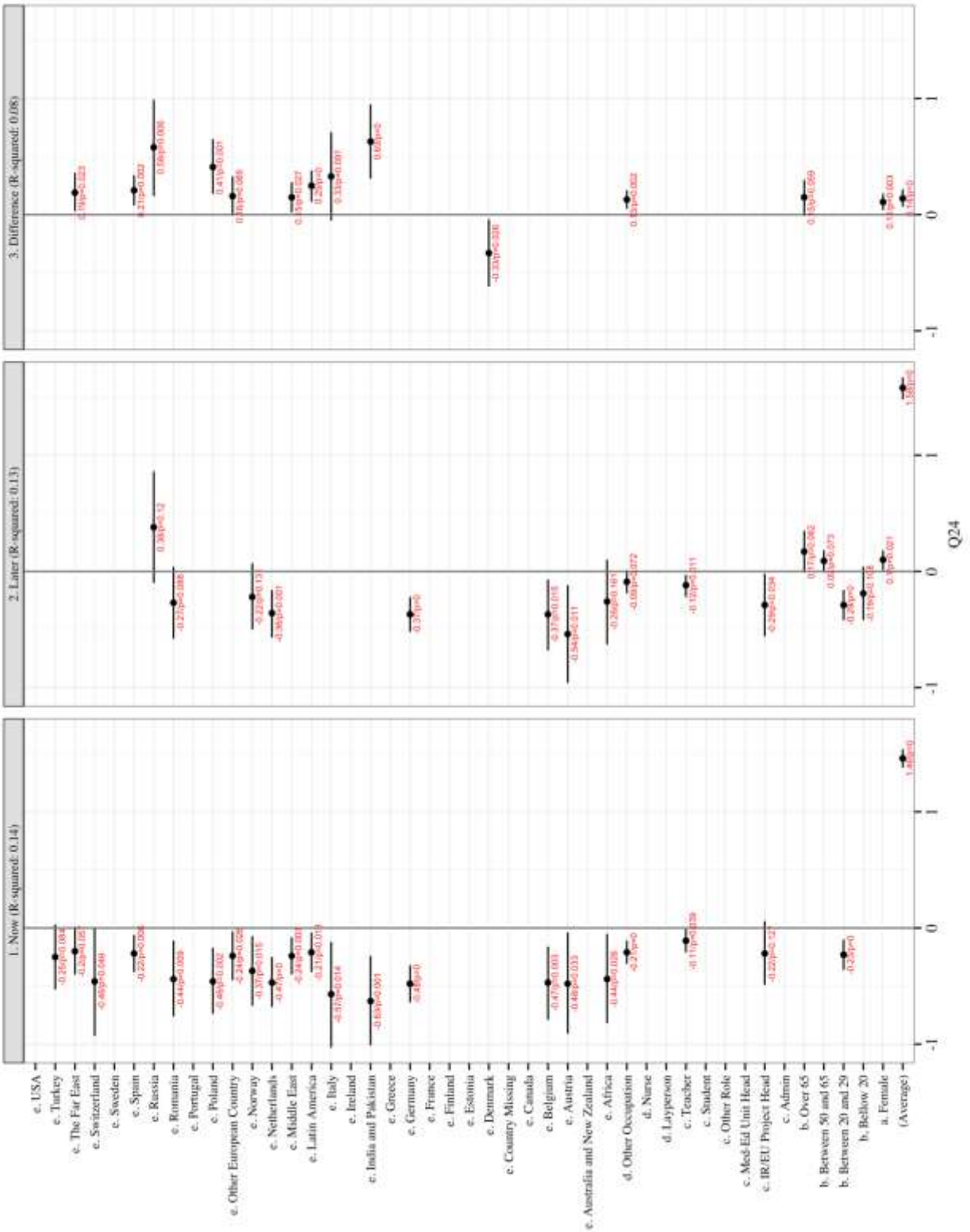

1. Now (R-squared: 0.09)
2. Later (R-squared: 0.07)
3. Difference (R-squared: 0.05)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q19

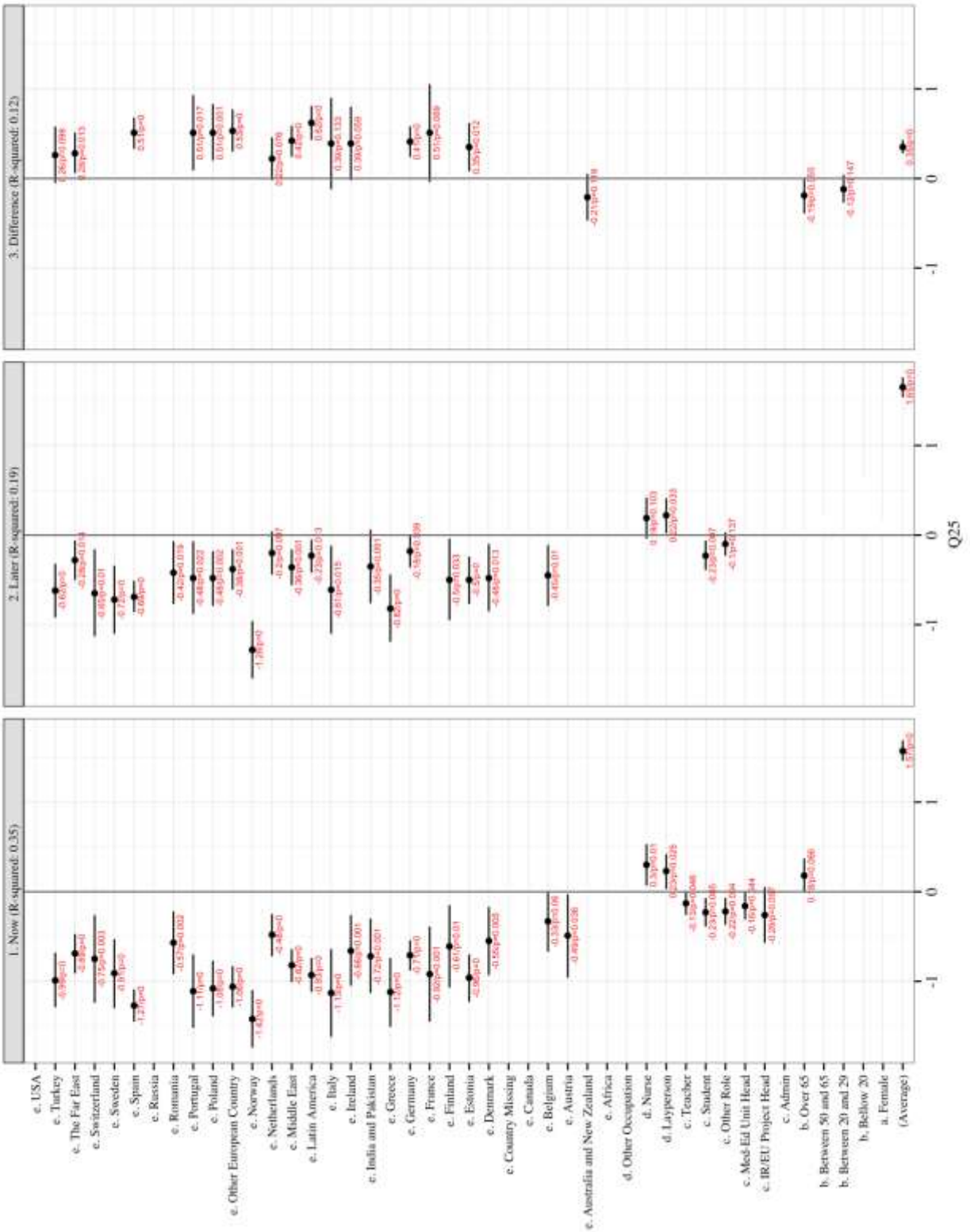

1. Now (R-squared: 0.12)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q20

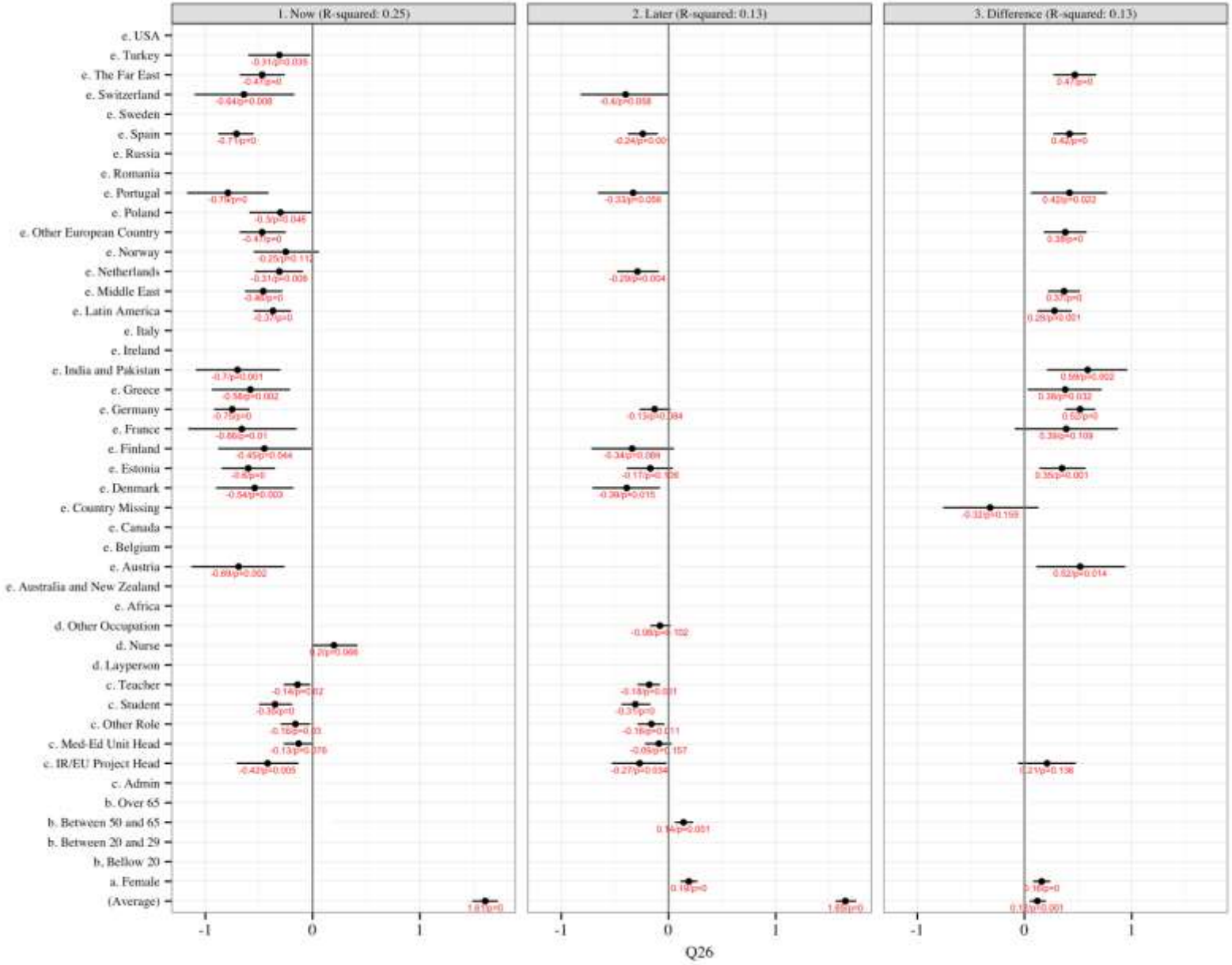

1. Now (R-squared: 0.12)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-0.5
0.0
0.5
1.0
Q21

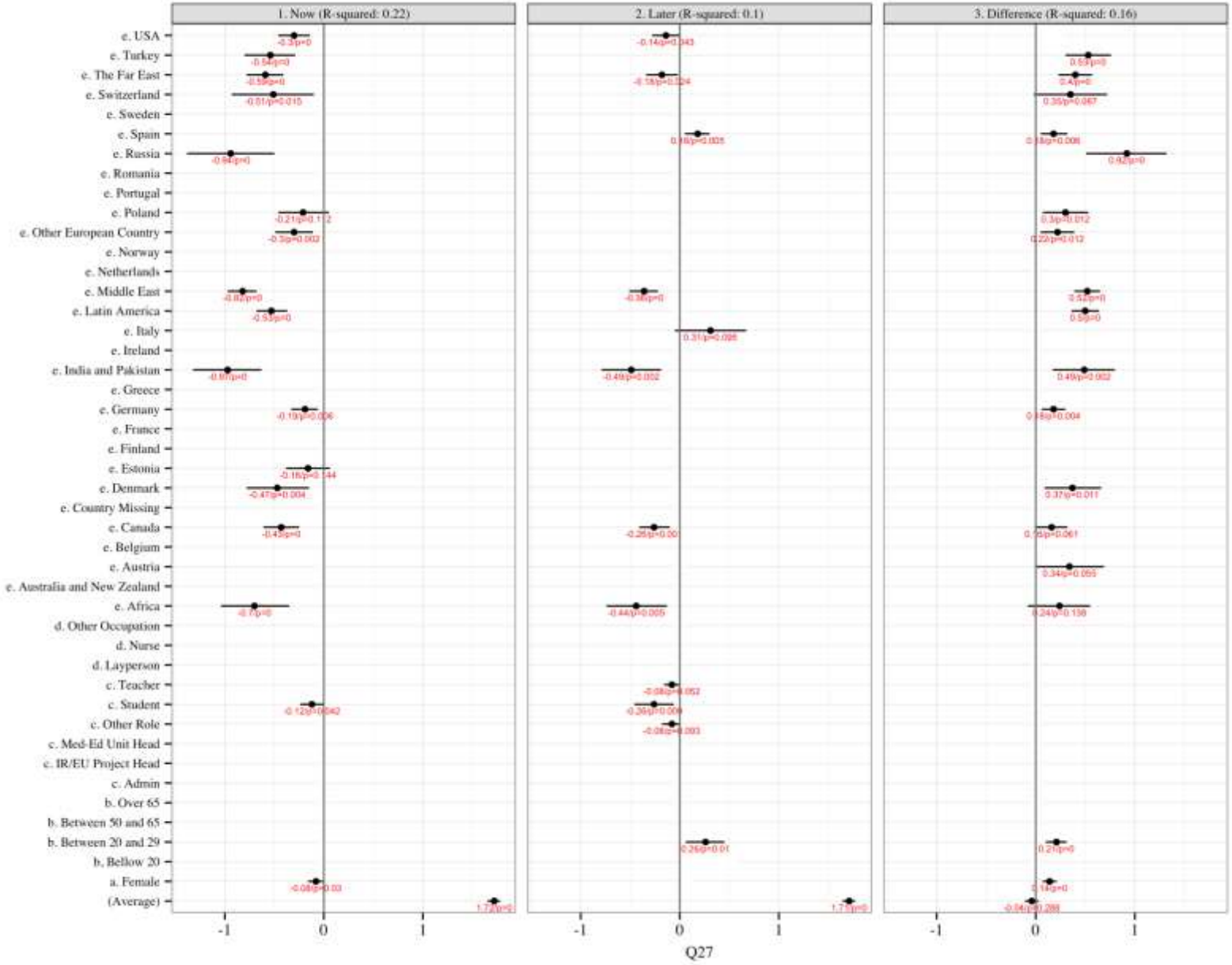

1. Now (R-squared: 0.13)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q22

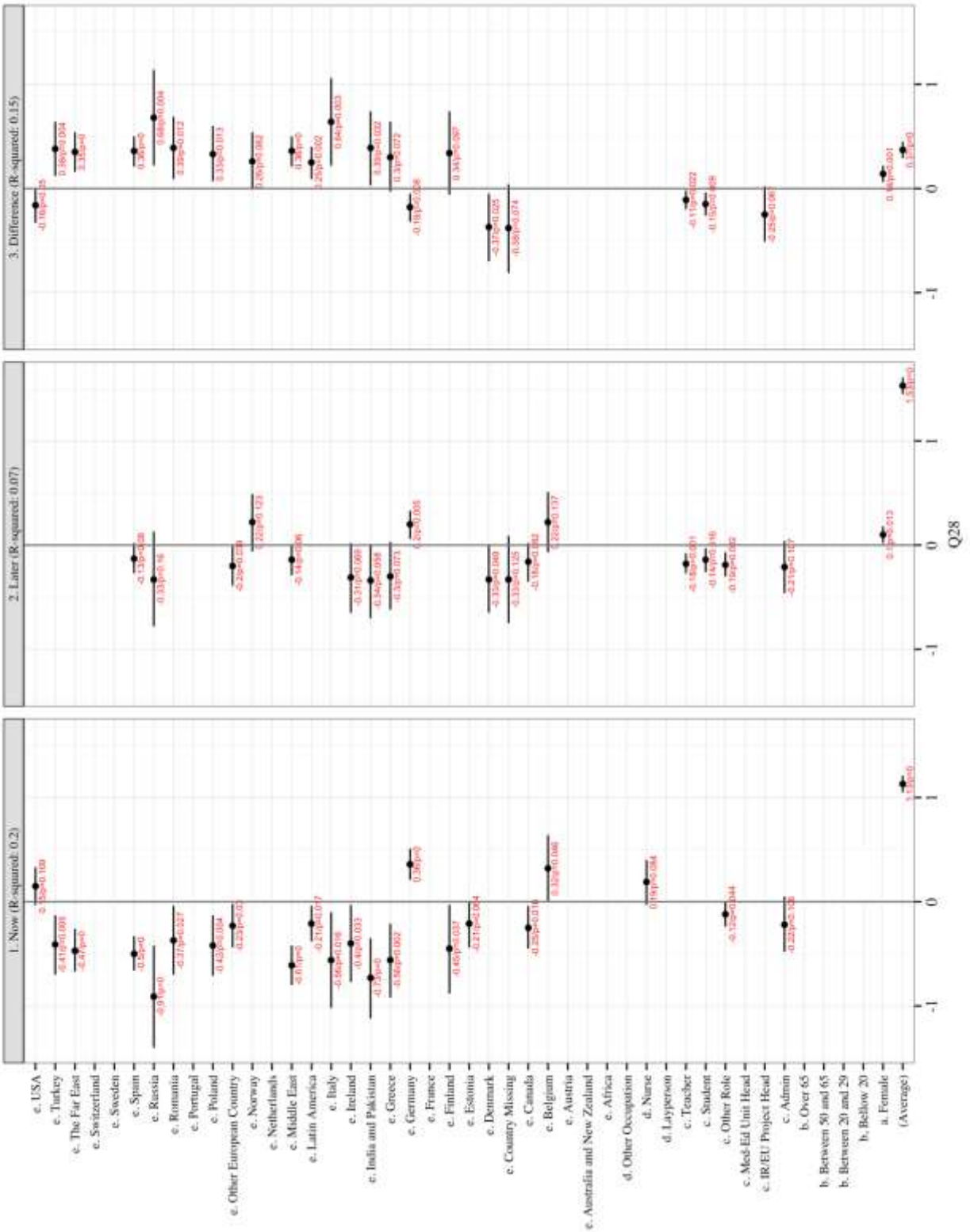

1. Now (R-squared: 0.3)
2. Later (R-squared: 0.24)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.5
-1.0
-0.5
0.0
0.5
1.0
Q23

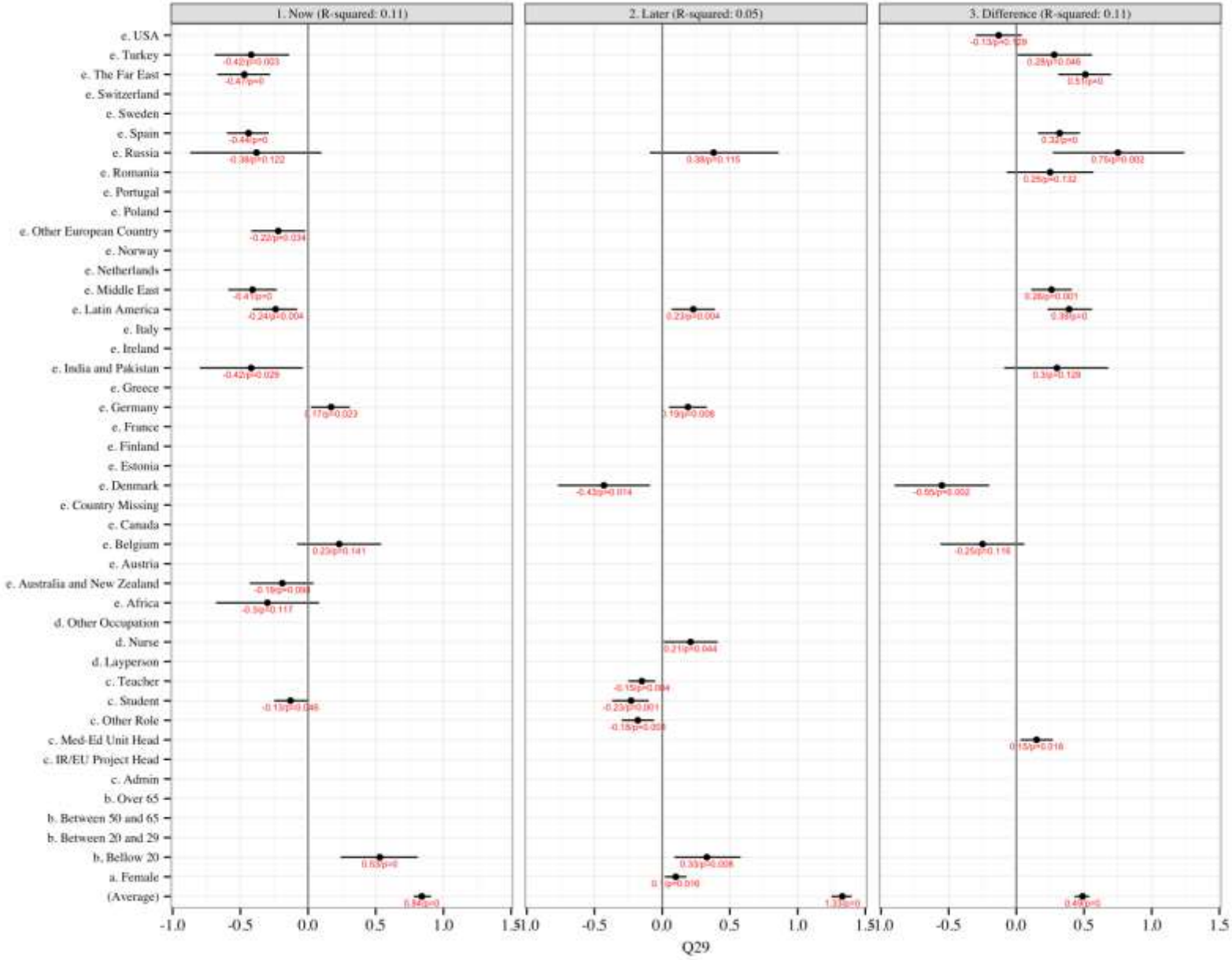

1: Now (R-squared: 0.14)
2: Later (R-squared: 0.13)
3: Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q24

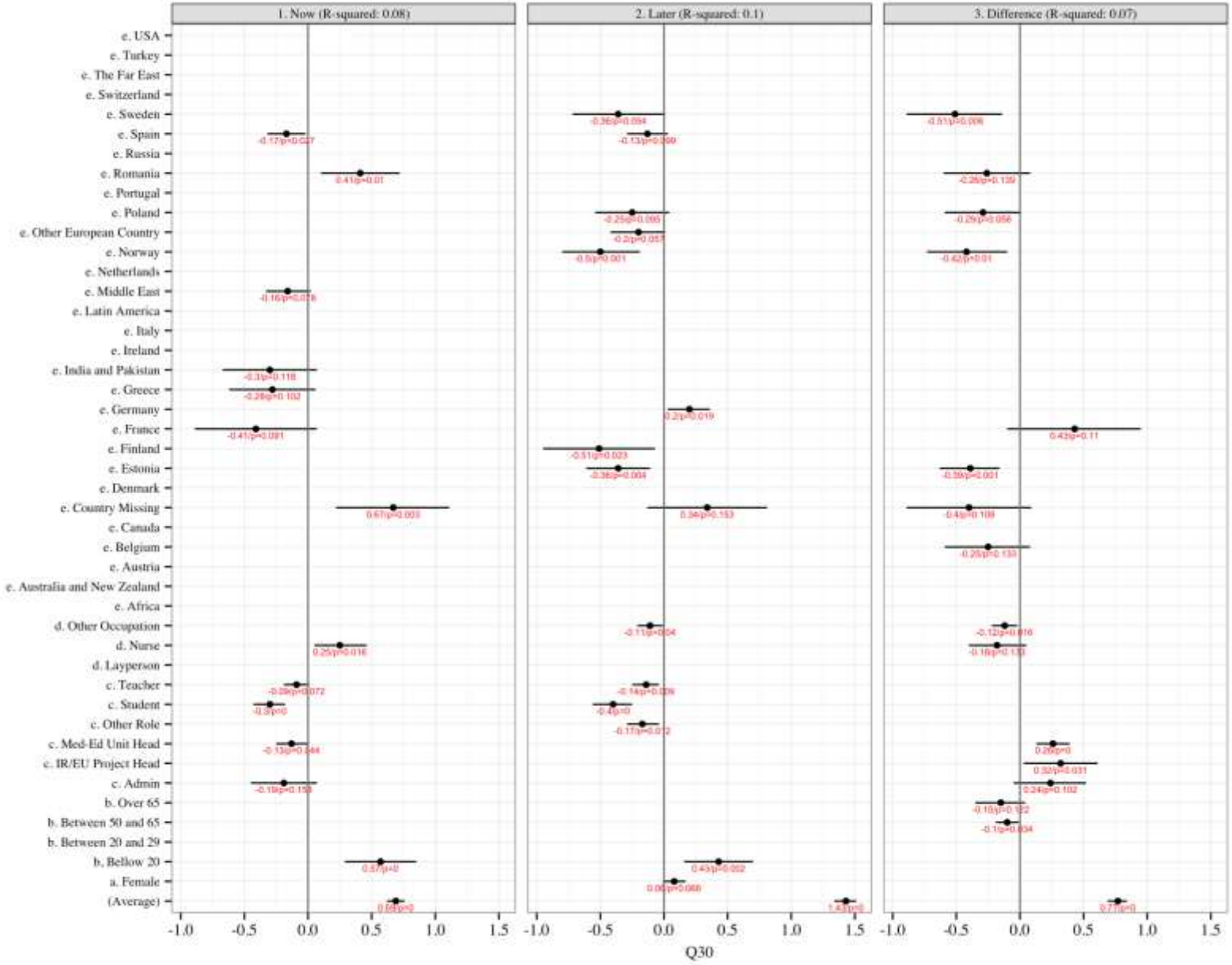

1: Now (R-squared: 0.35)
2: Later (R-squared: 0.19)
3: Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q25

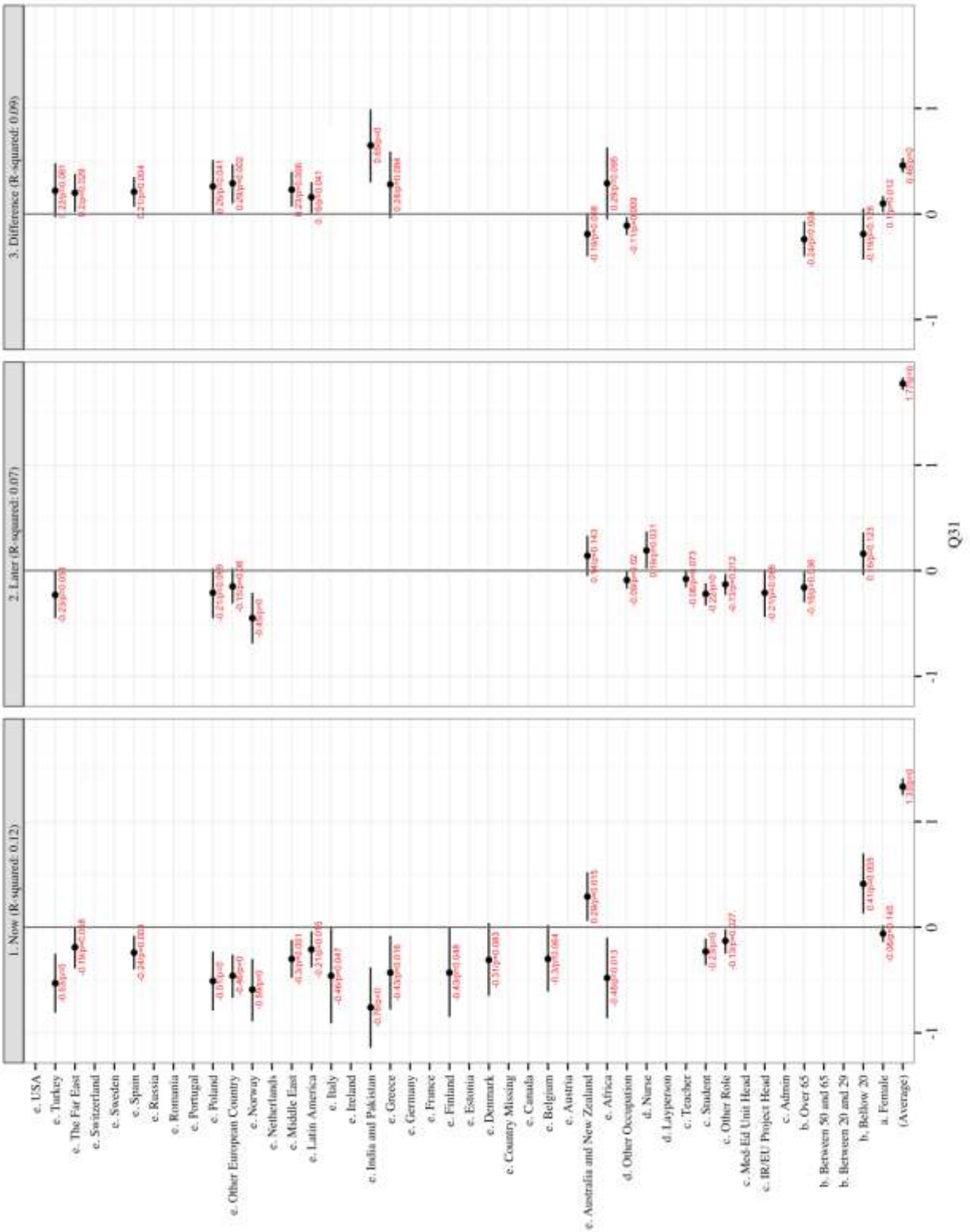

1. Now (R-squared: 0.25)
2. Later (R-squared: 0.13)
3. Difference (R-squared: 0.13)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q26

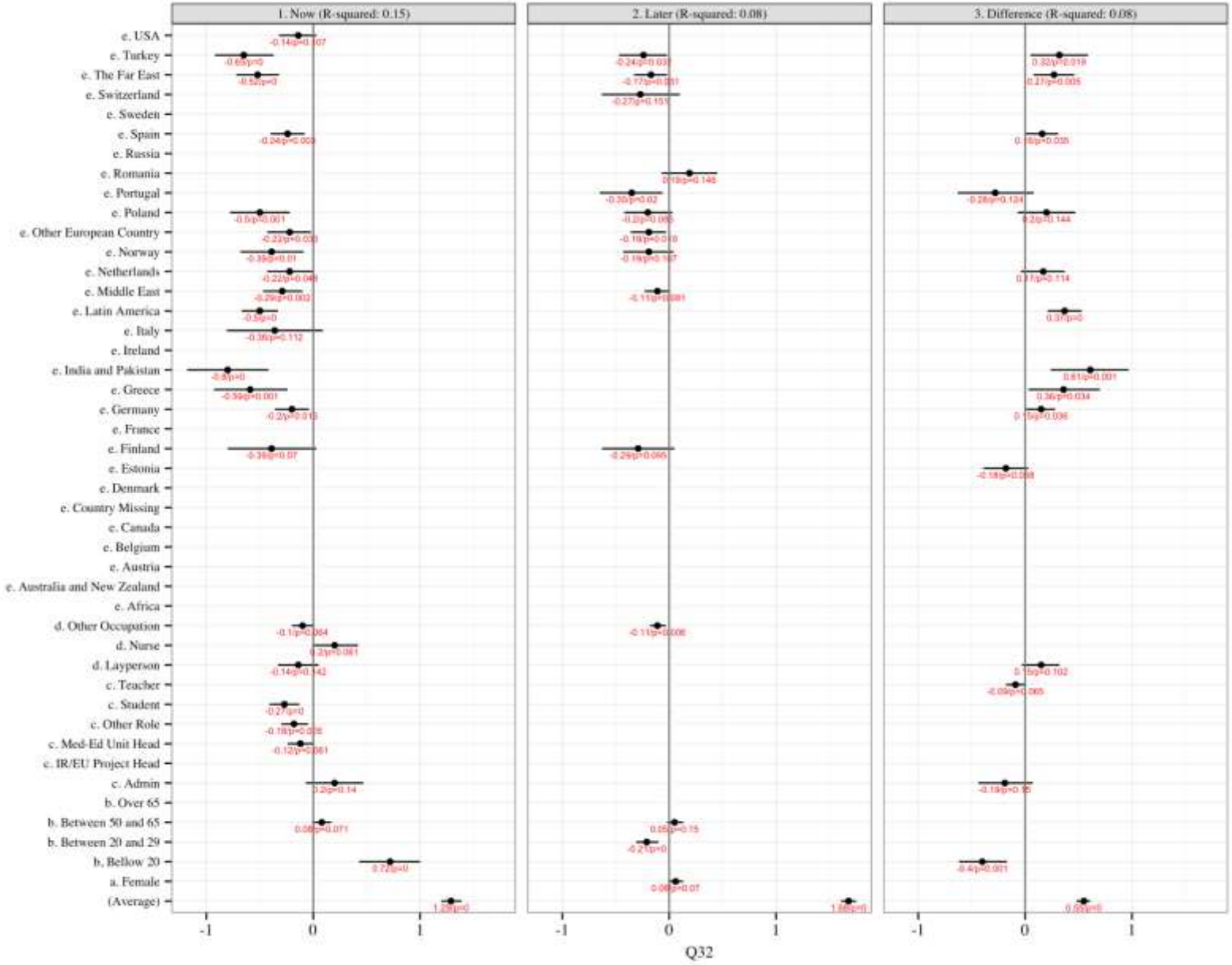

1. Now (R-squared: 0.22)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.16)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q27

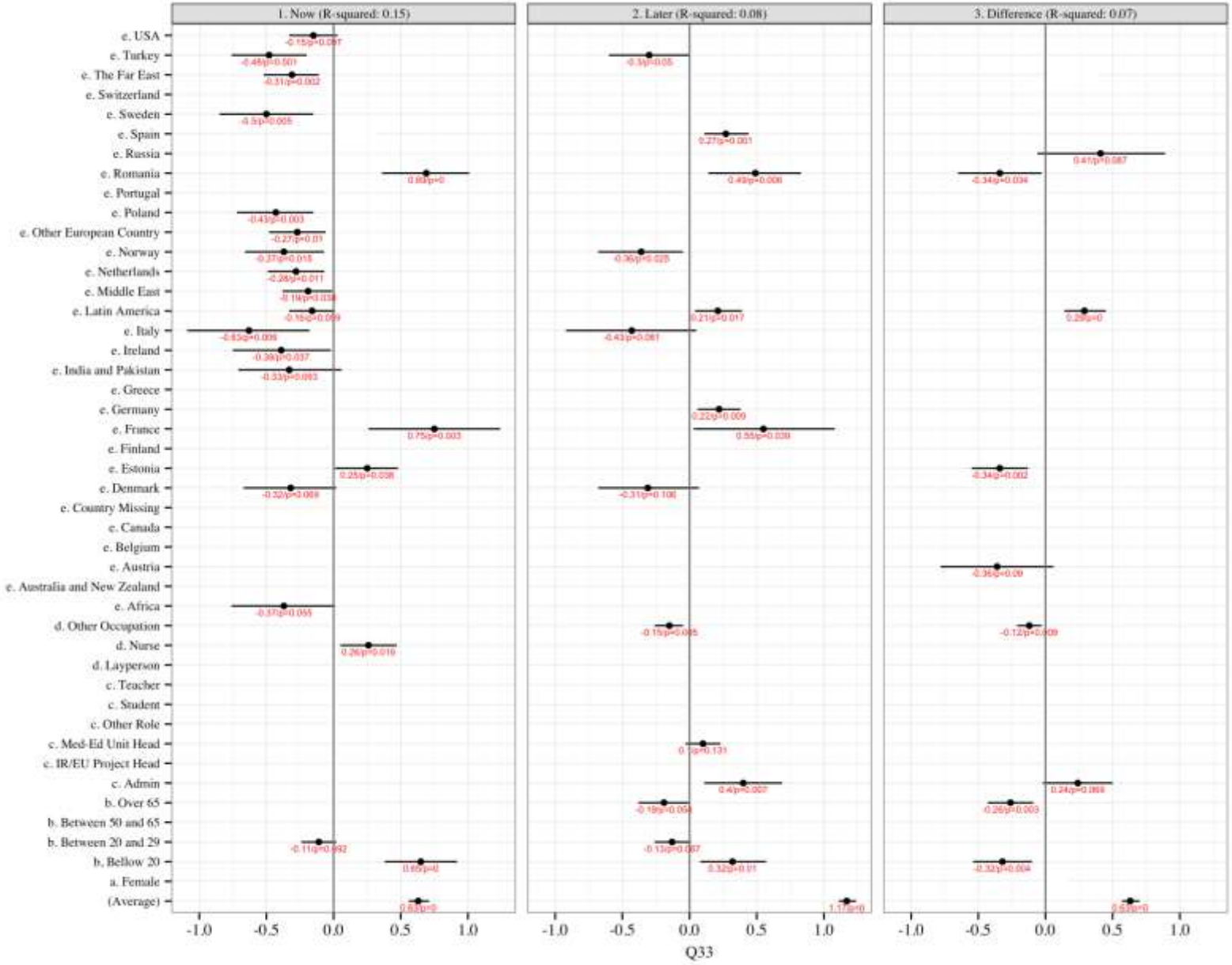

1: Now (R-squared: 0.2)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.15)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q28

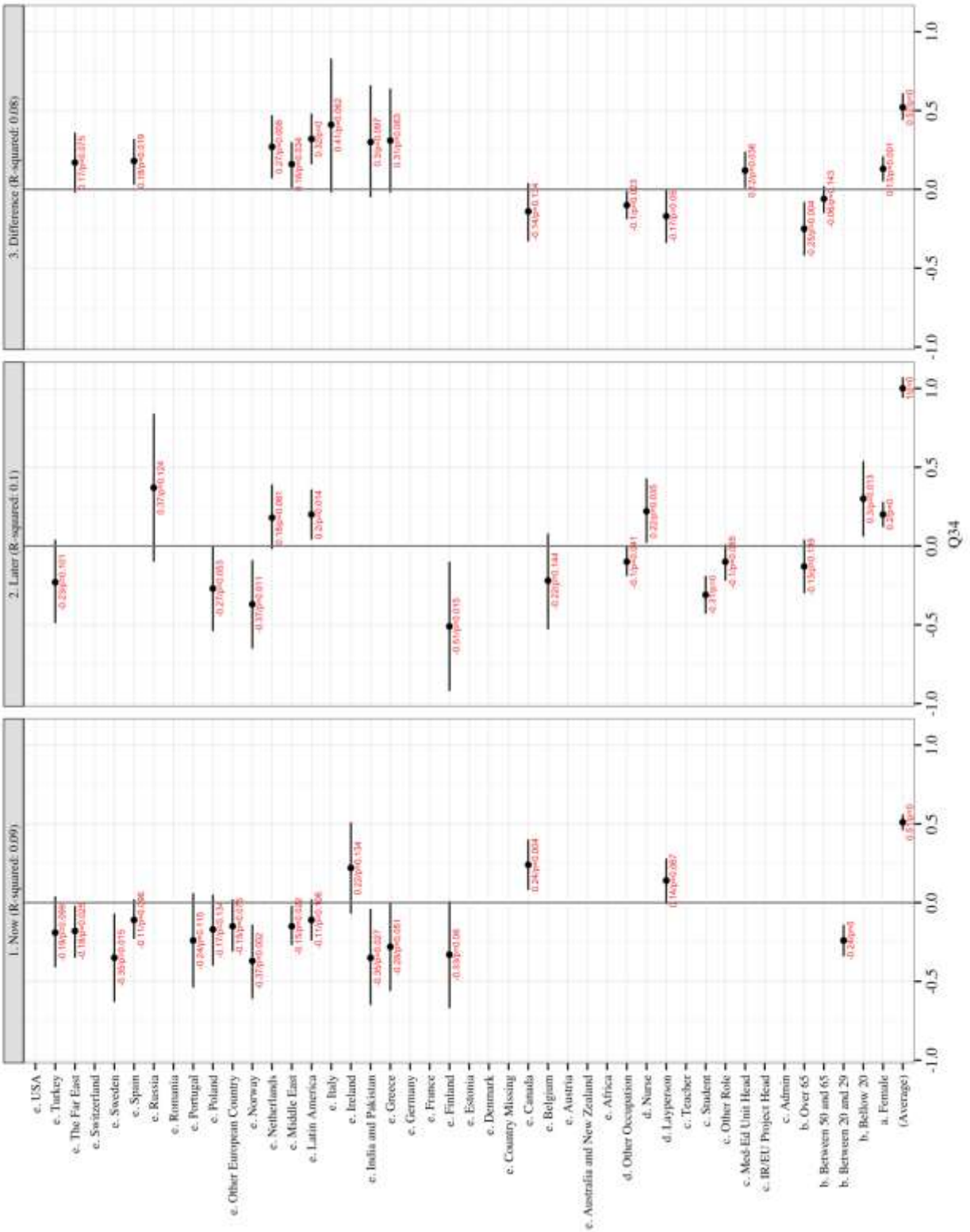

1. Now (R-squared: 0.11)
2. Later (R-squared: 0.05)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q29

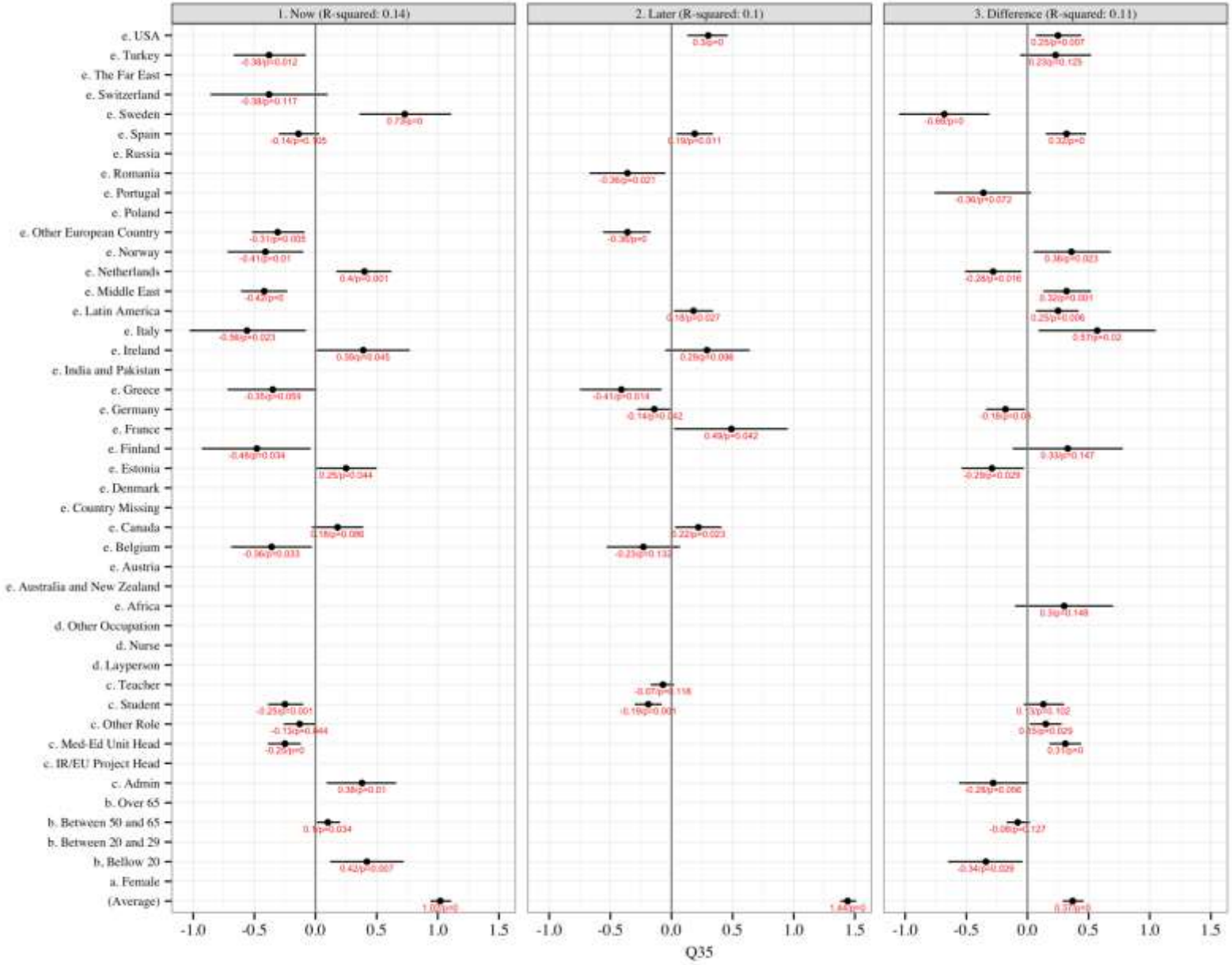

1. Now (R-squared: 0.08)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q30

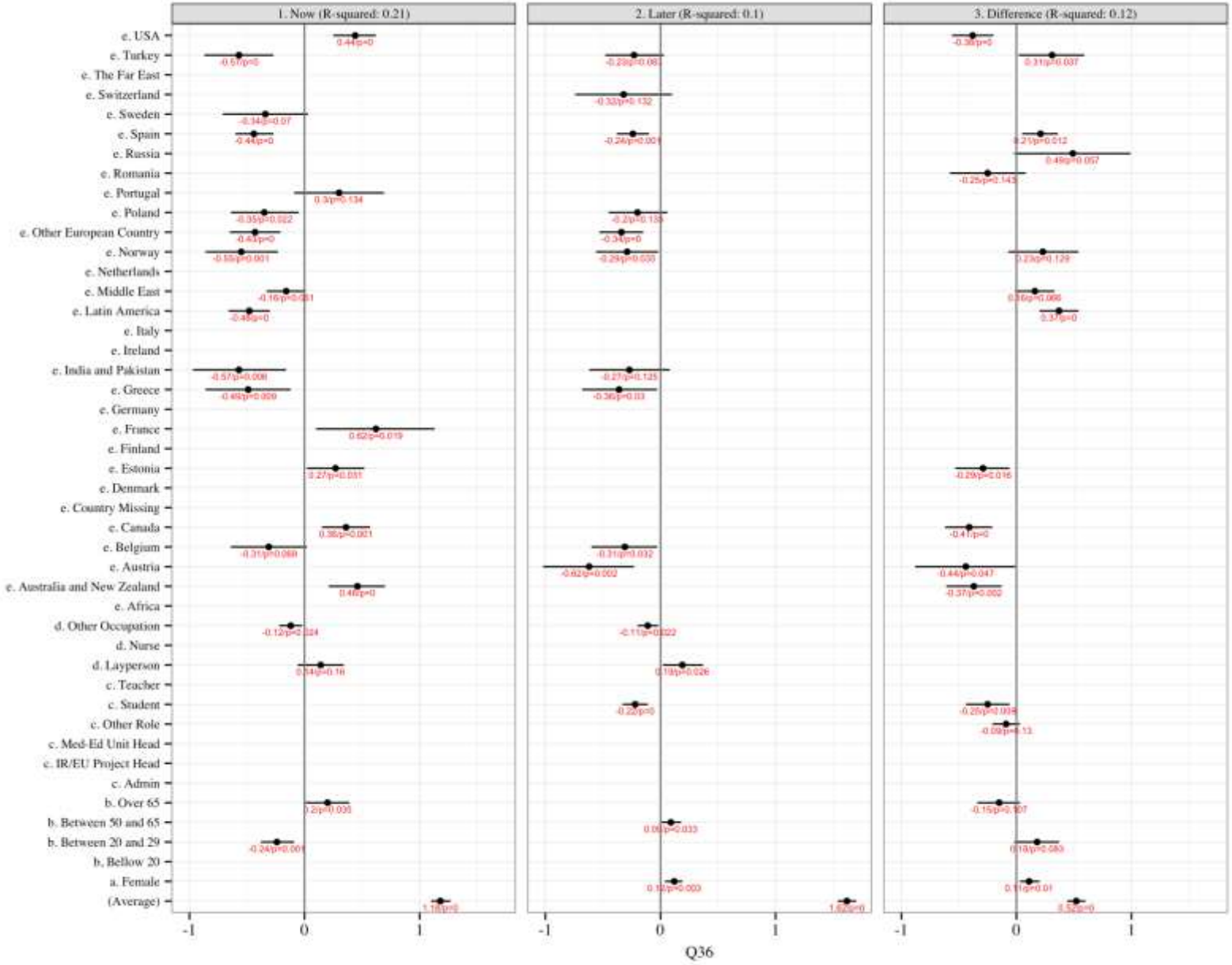

1: Now (R-squared: 0.12)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q31

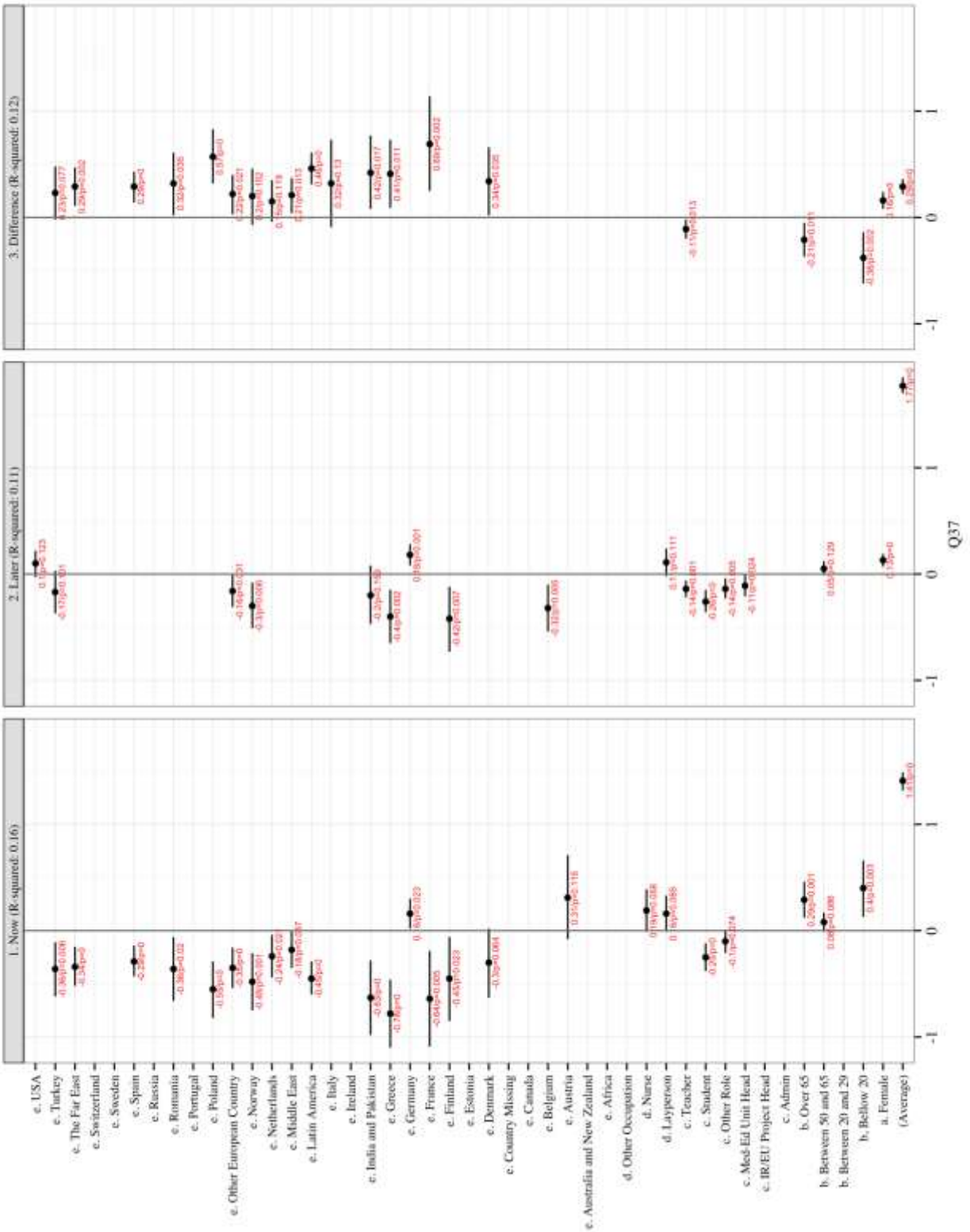

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q32

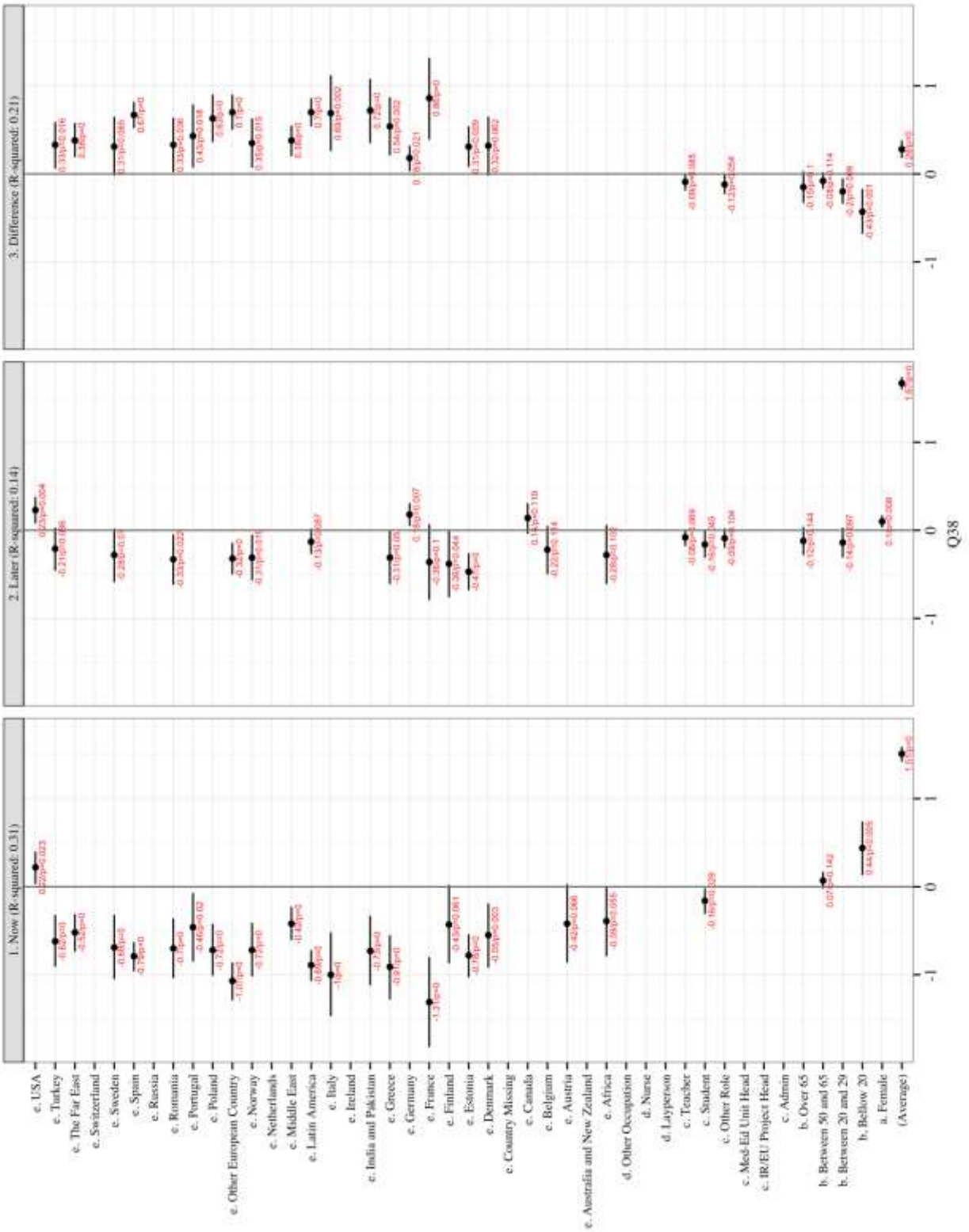

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q33

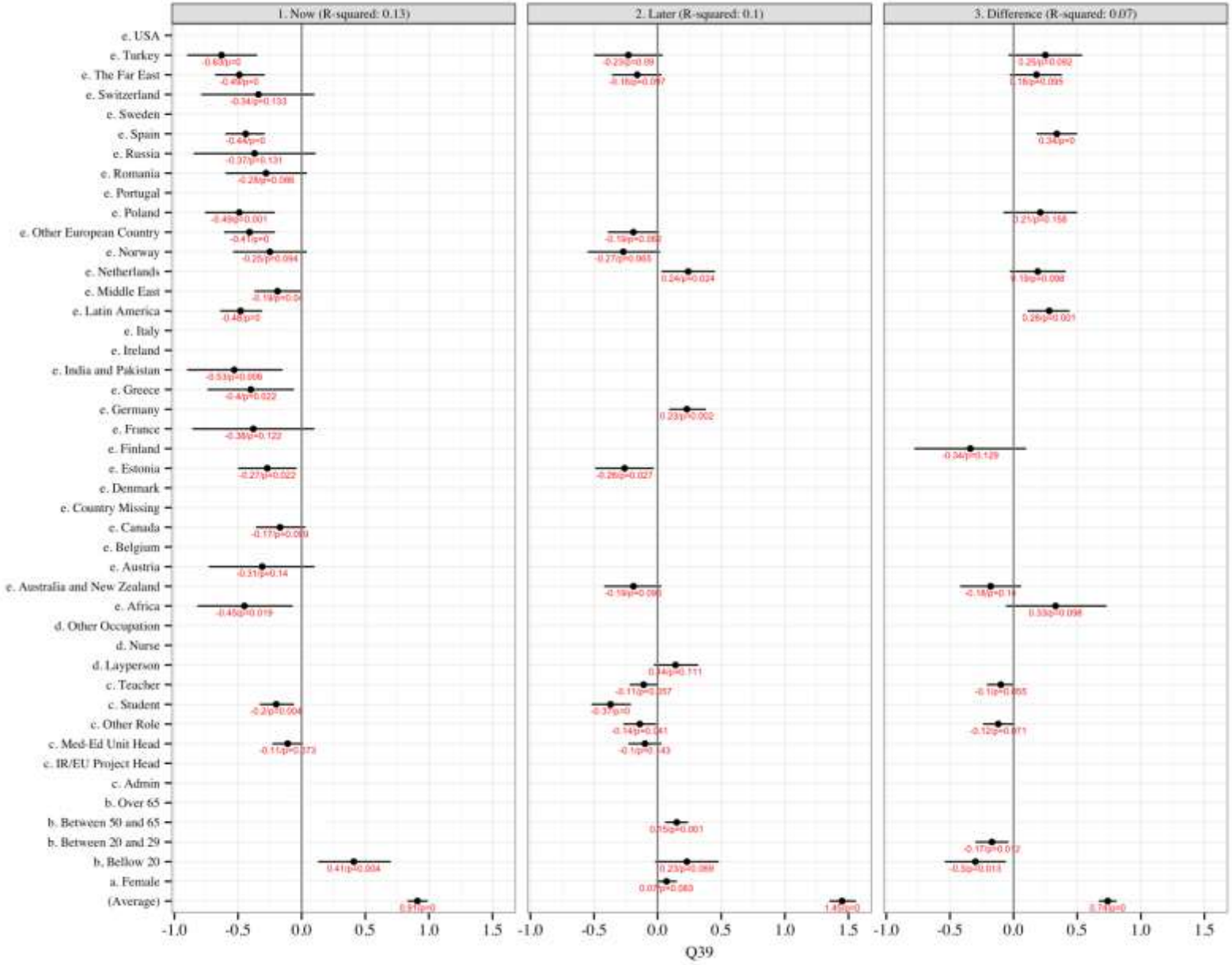

1. Now (R-squared: 0.09)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q34

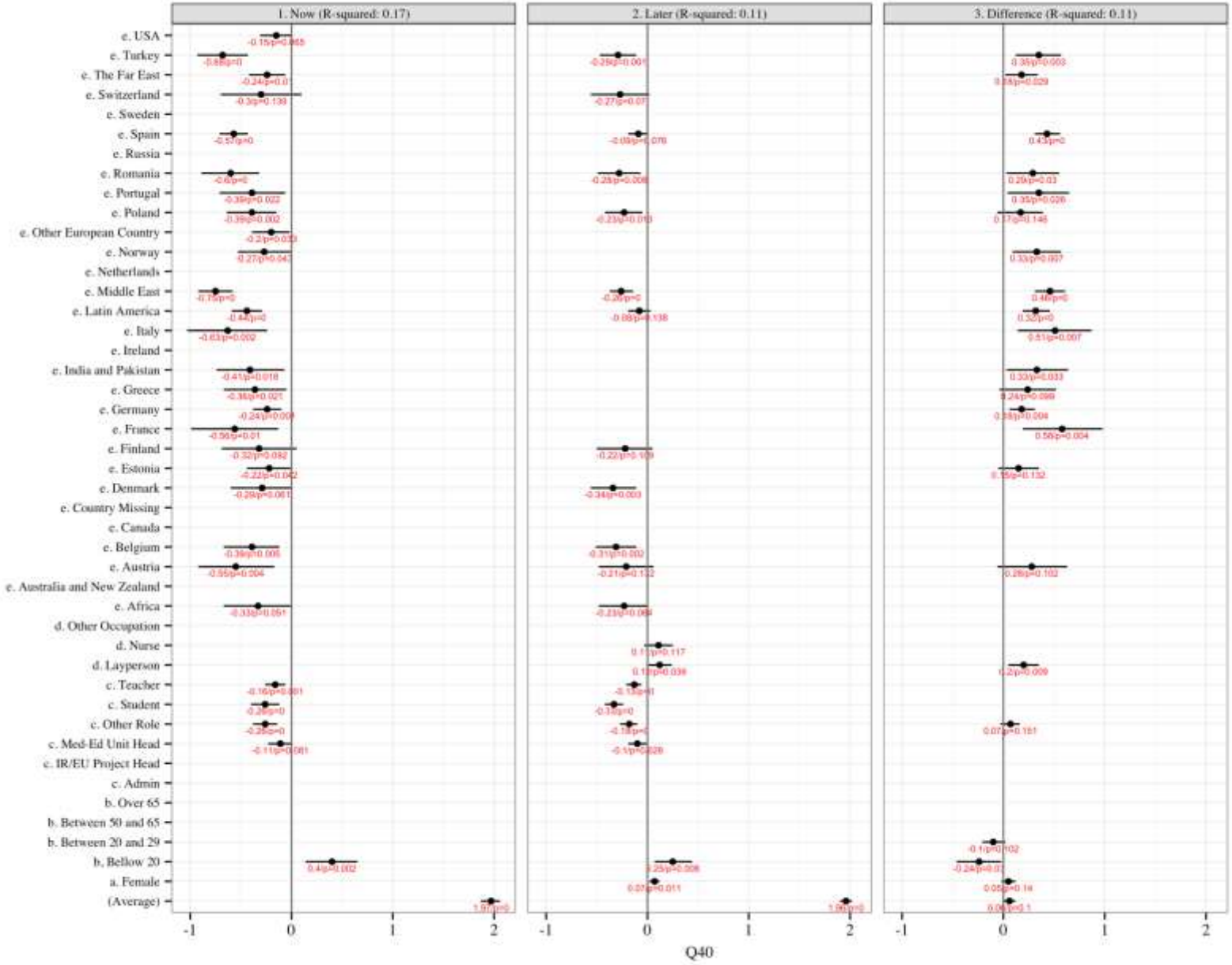

1. Now (R-squared: 0.14)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q35

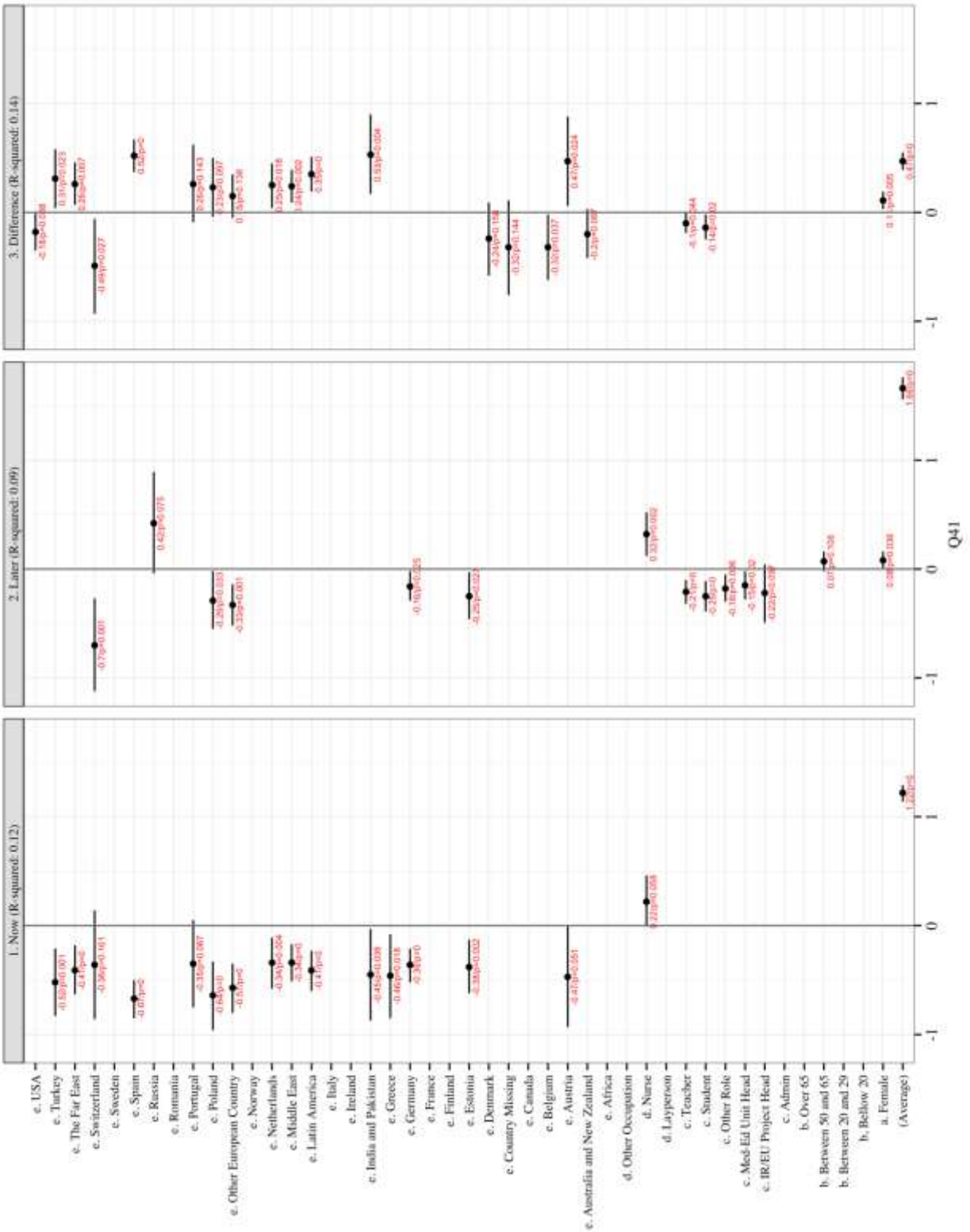

1. Now (R-squared: 0.21)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q36

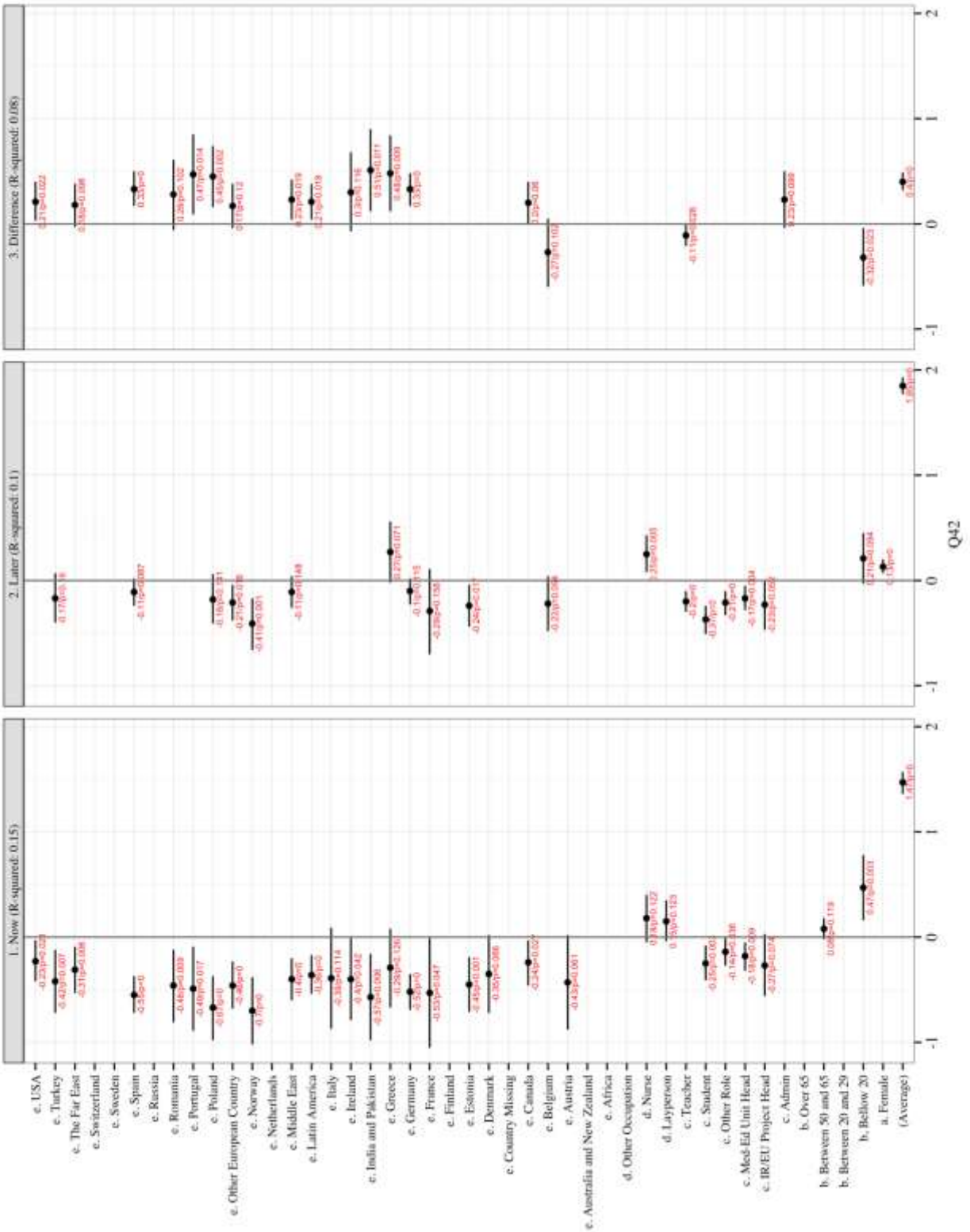

1. Now (R-squared: 0.16)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q37

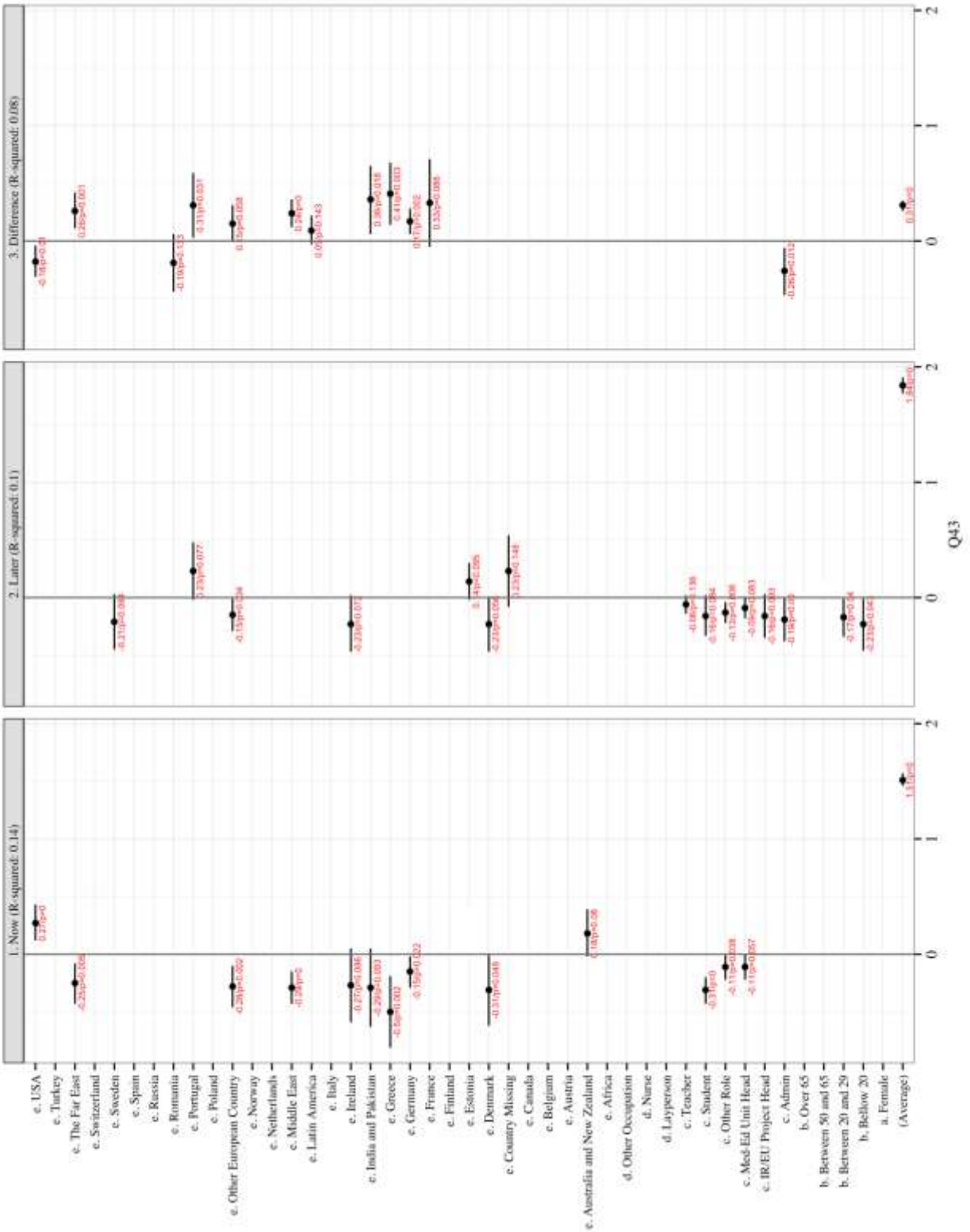

1: Now (R-squared: 0.31)
2: Later (R-squared: 0.14)
3: Difference (R-squared: 0.21)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q38

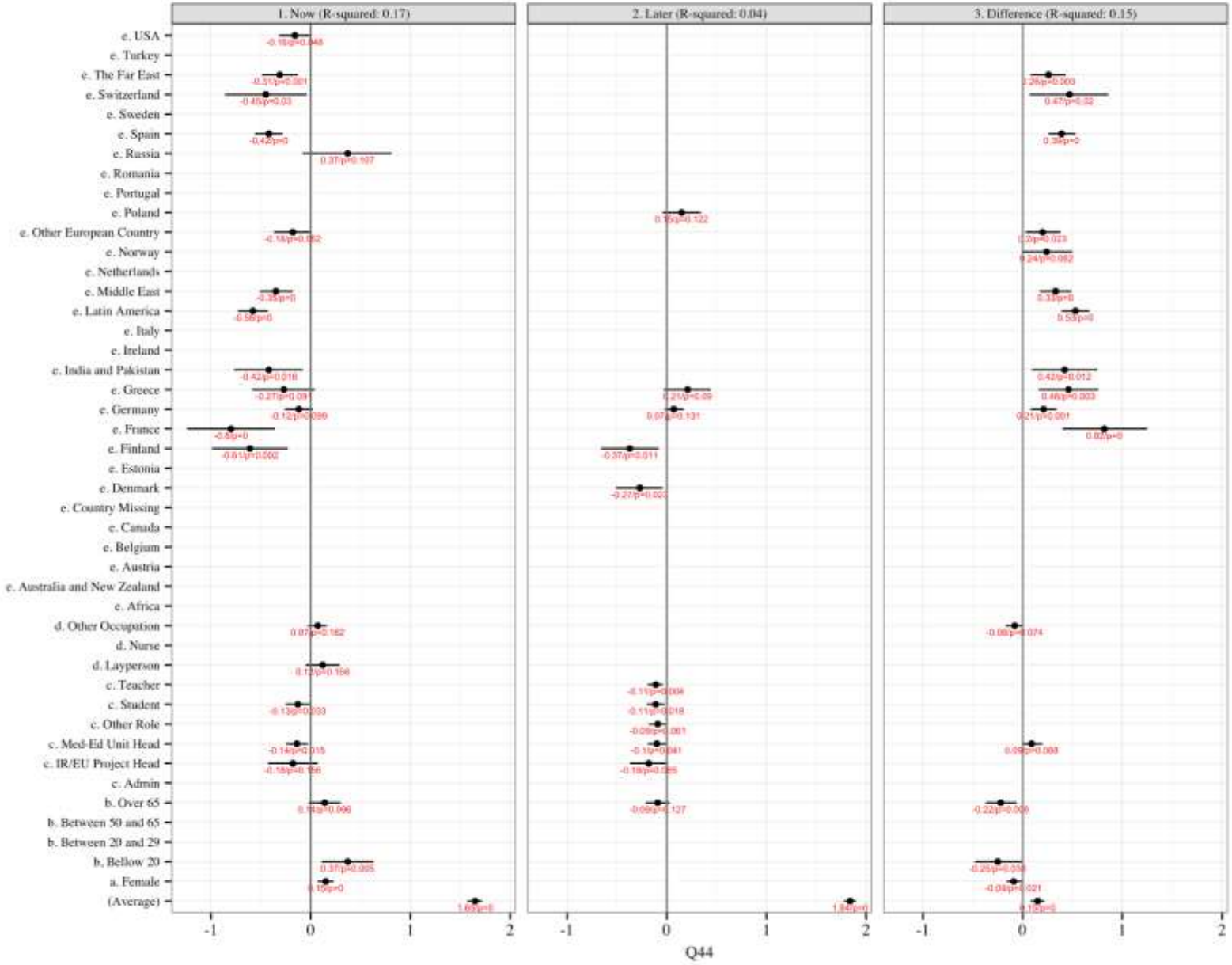

1. Now (R-squared: 0.13)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q39

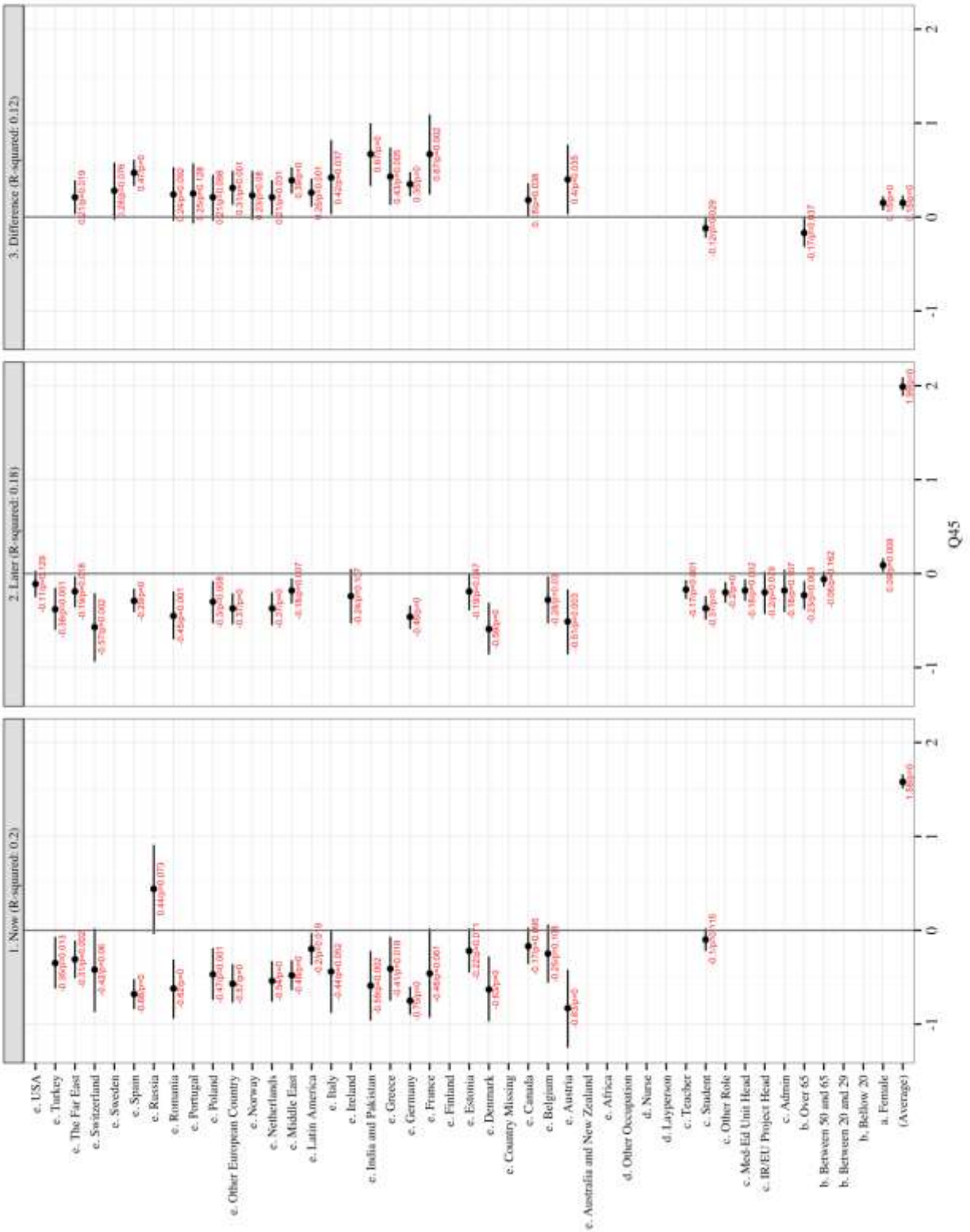

1. Now (R-squared: 0.17)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q40

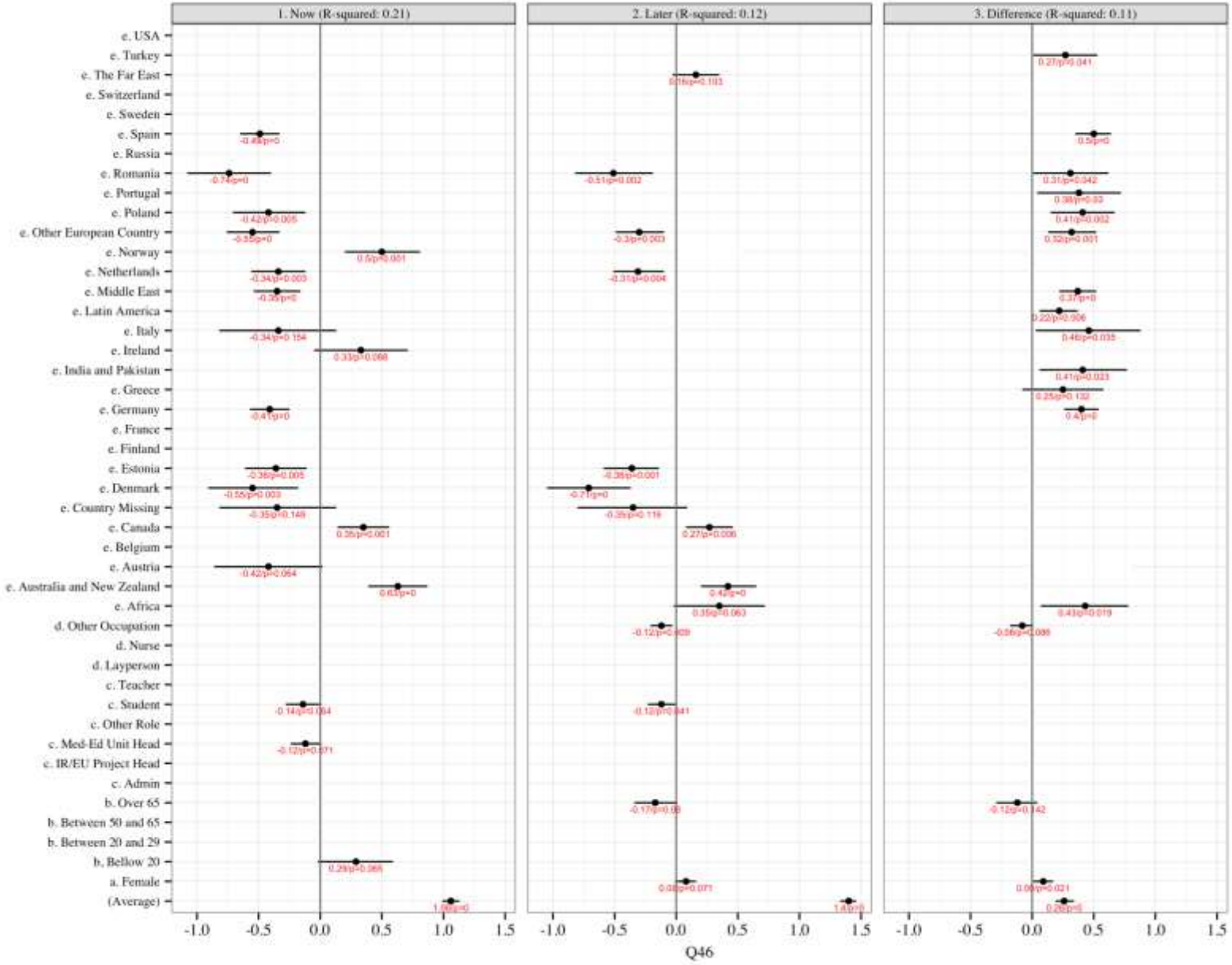

1: Now (R-squared: 0.12)
2: Later (R-squared: 0.09)
3: Difference (R-squared: 0.14)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q41

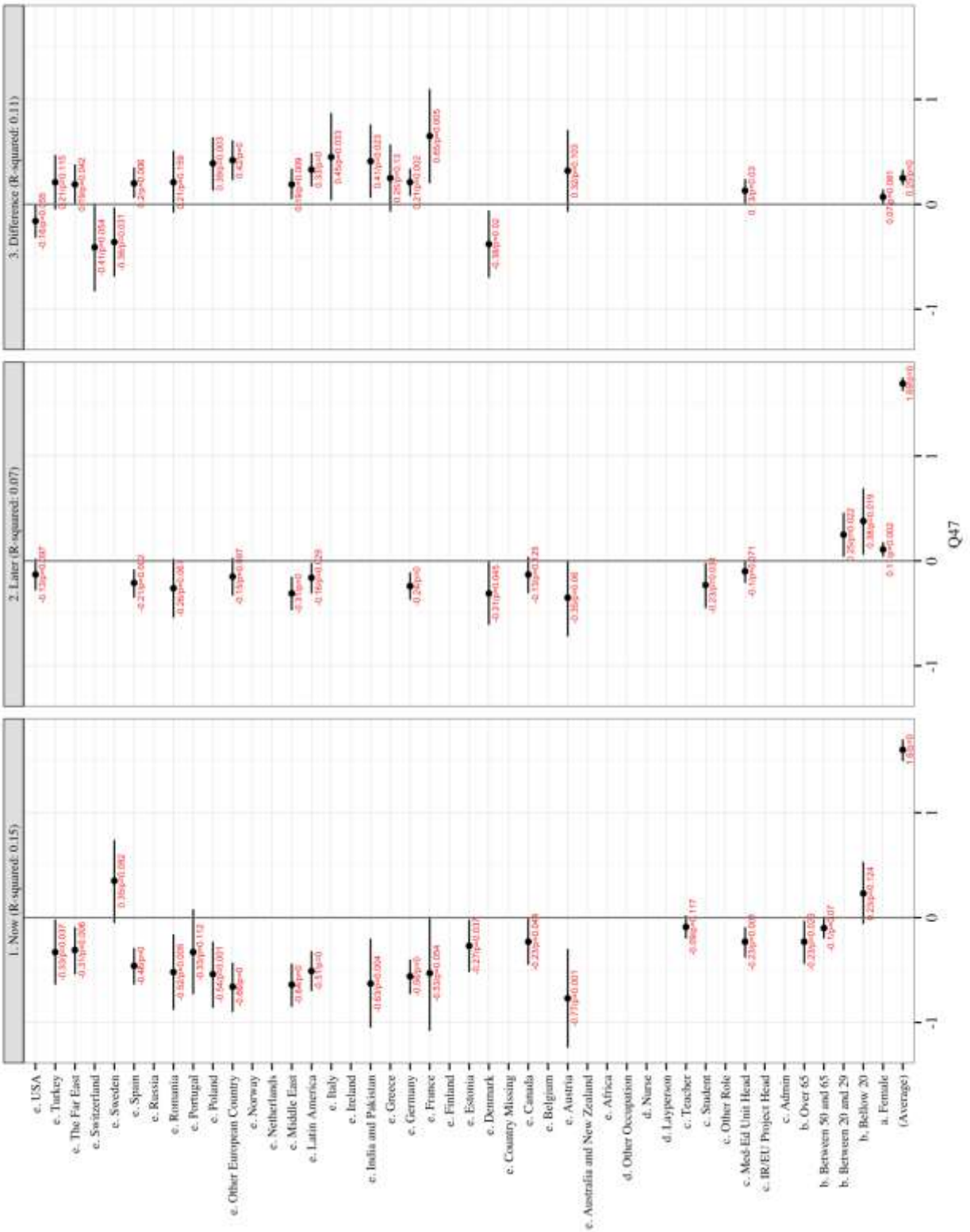

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q42

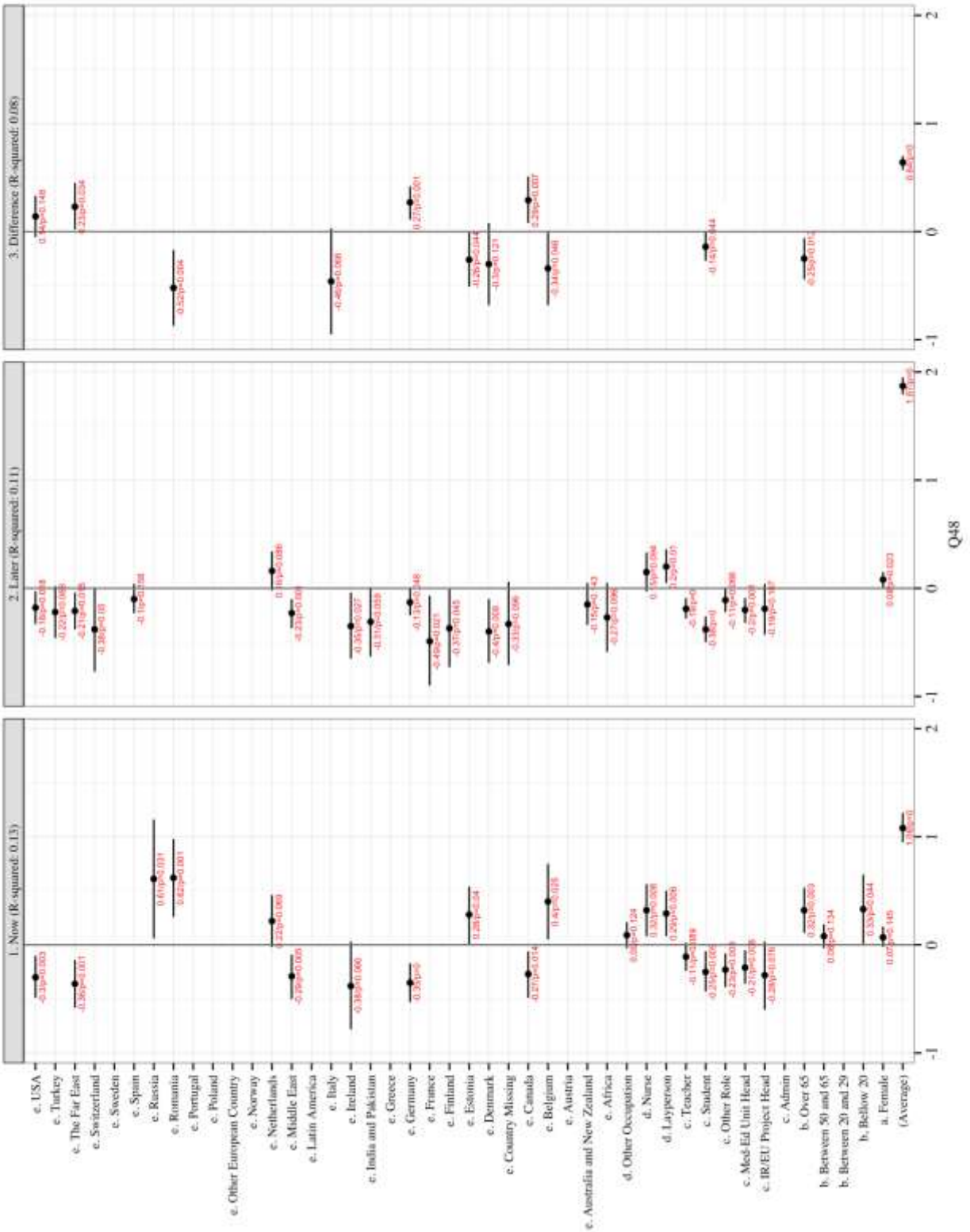

1: Now (R-squared: 0.14)
2: Later (R-squared: 0.11)
3: Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
0
1
2
Q43

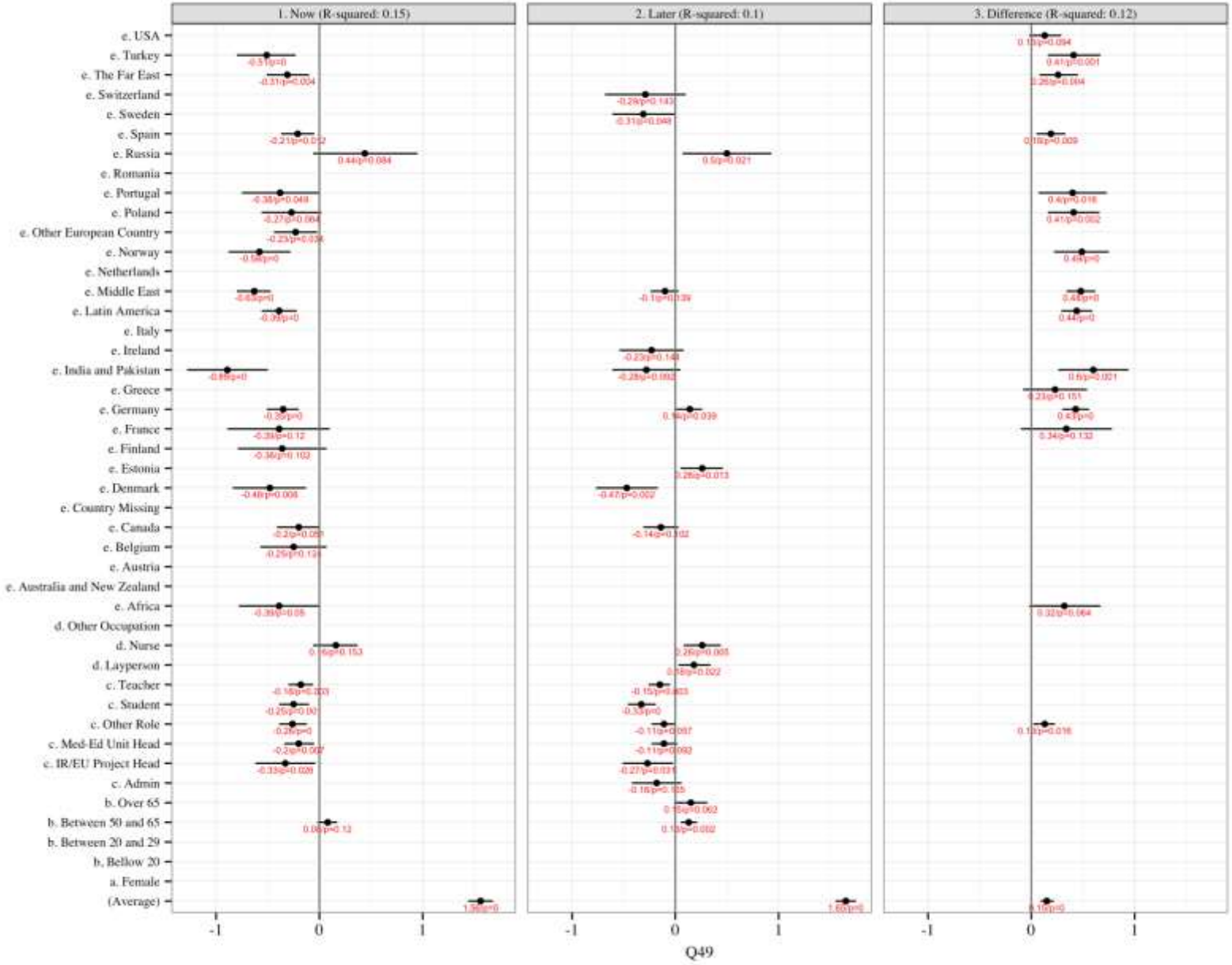

1. Now (R-squared: 0.17)
2. Later (R-squared: 0.04)
3. Difference (R-squared: 0.15)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q44

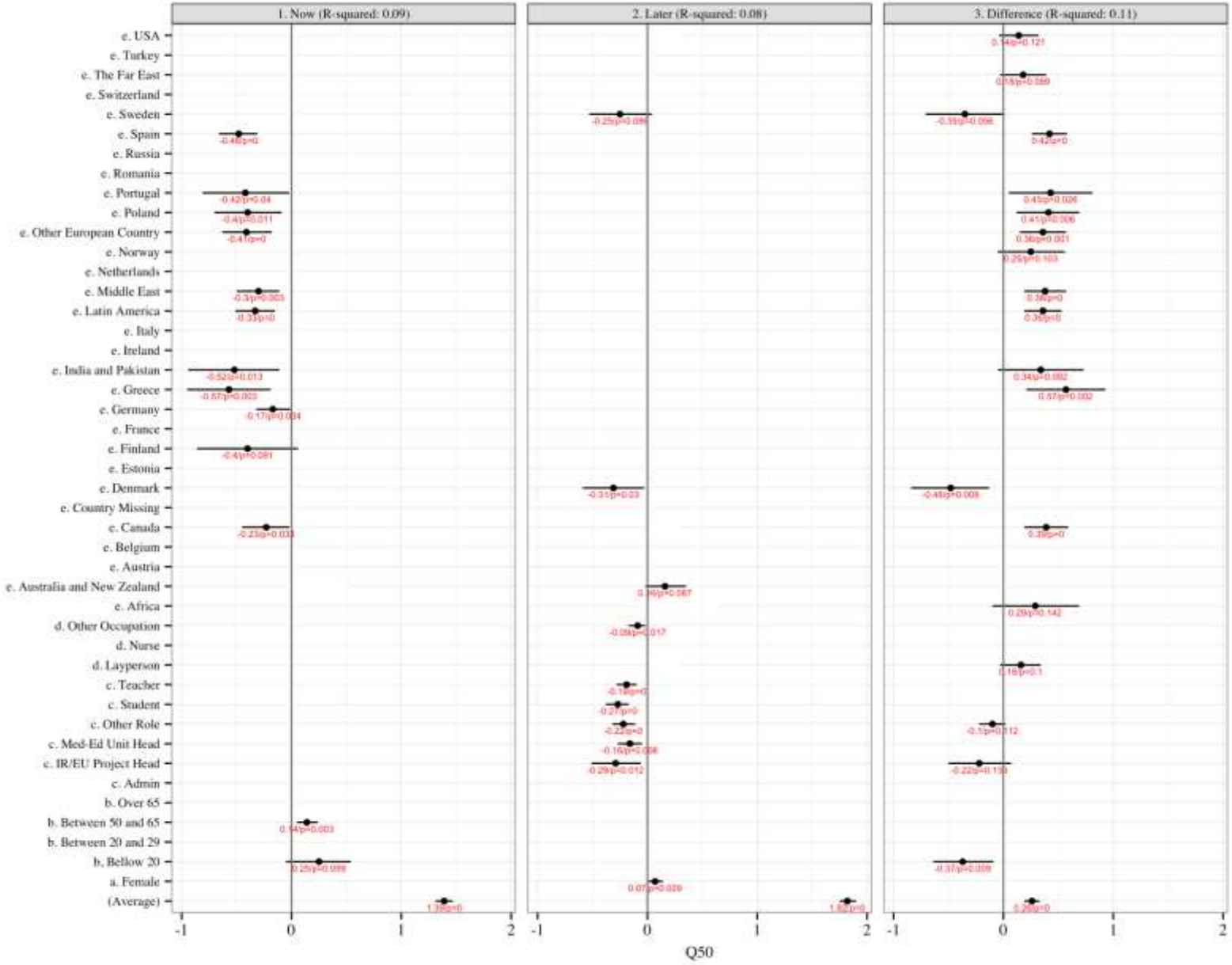

1: Now (R-squared: 0.2)
2: Later (R-squared: 0.18)
3: Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q45

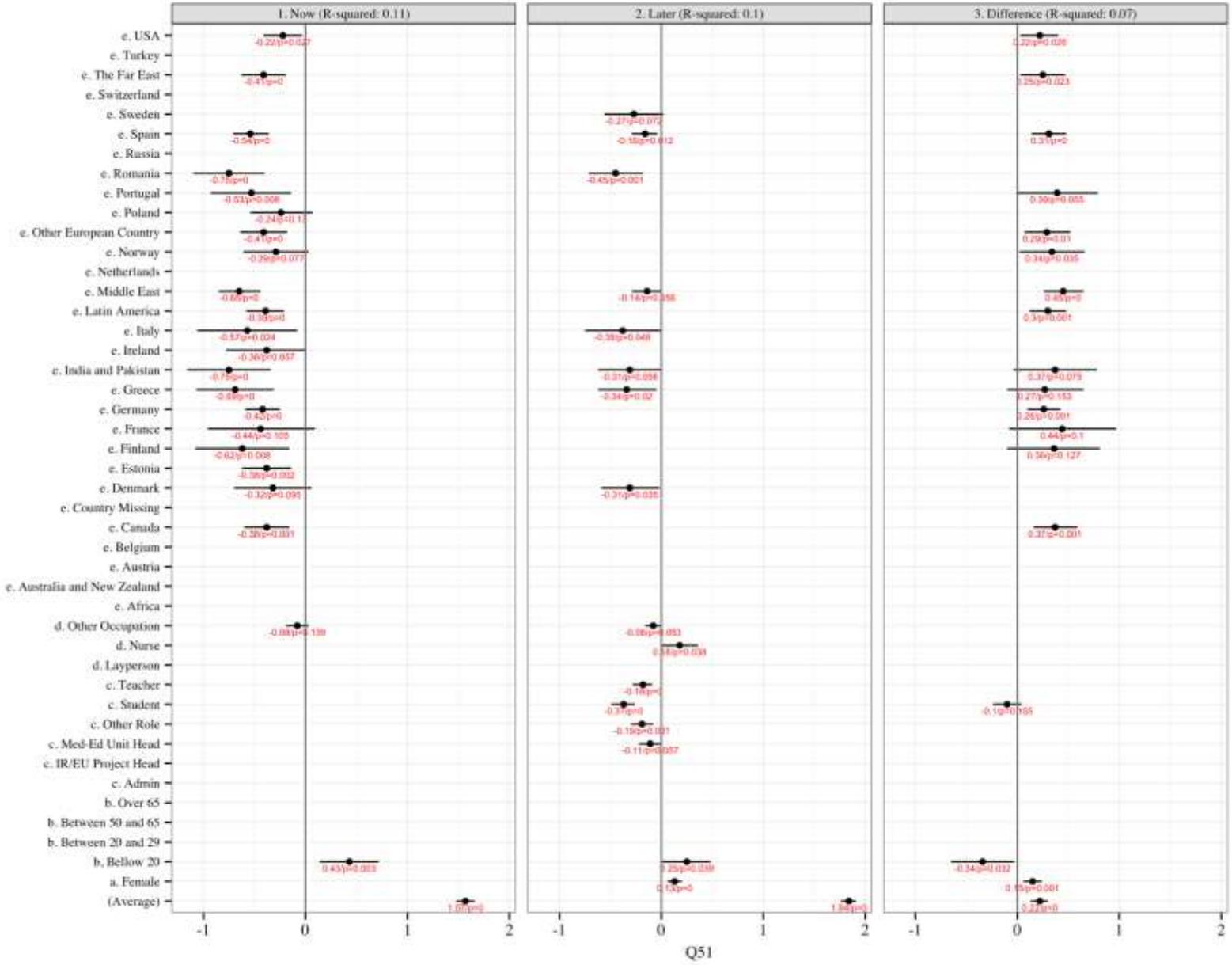

1. Now (R-squared: 0.21)
2. Later (R-squared: 0.12)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q46

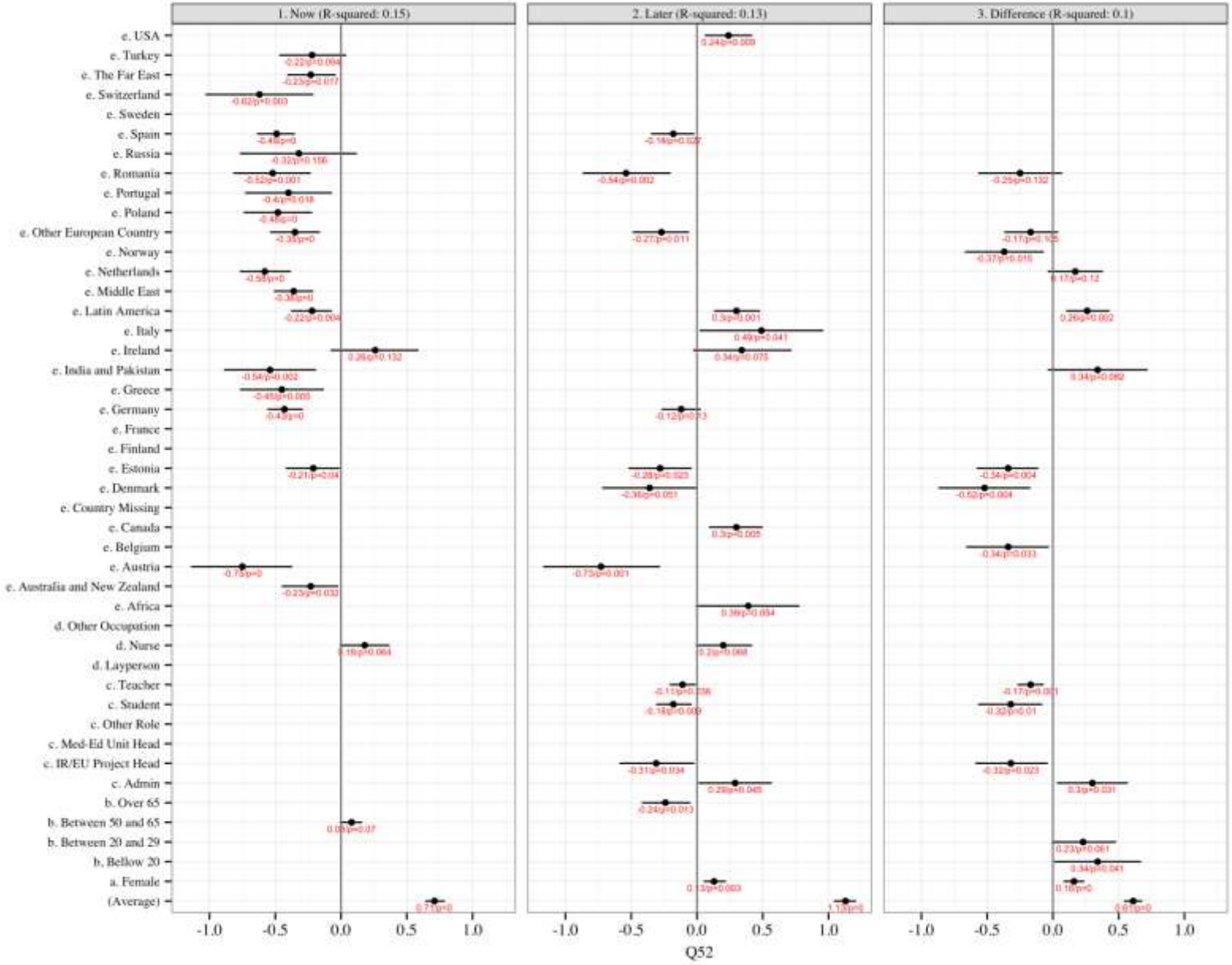

1: Now (R-squared: 0.15)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q47

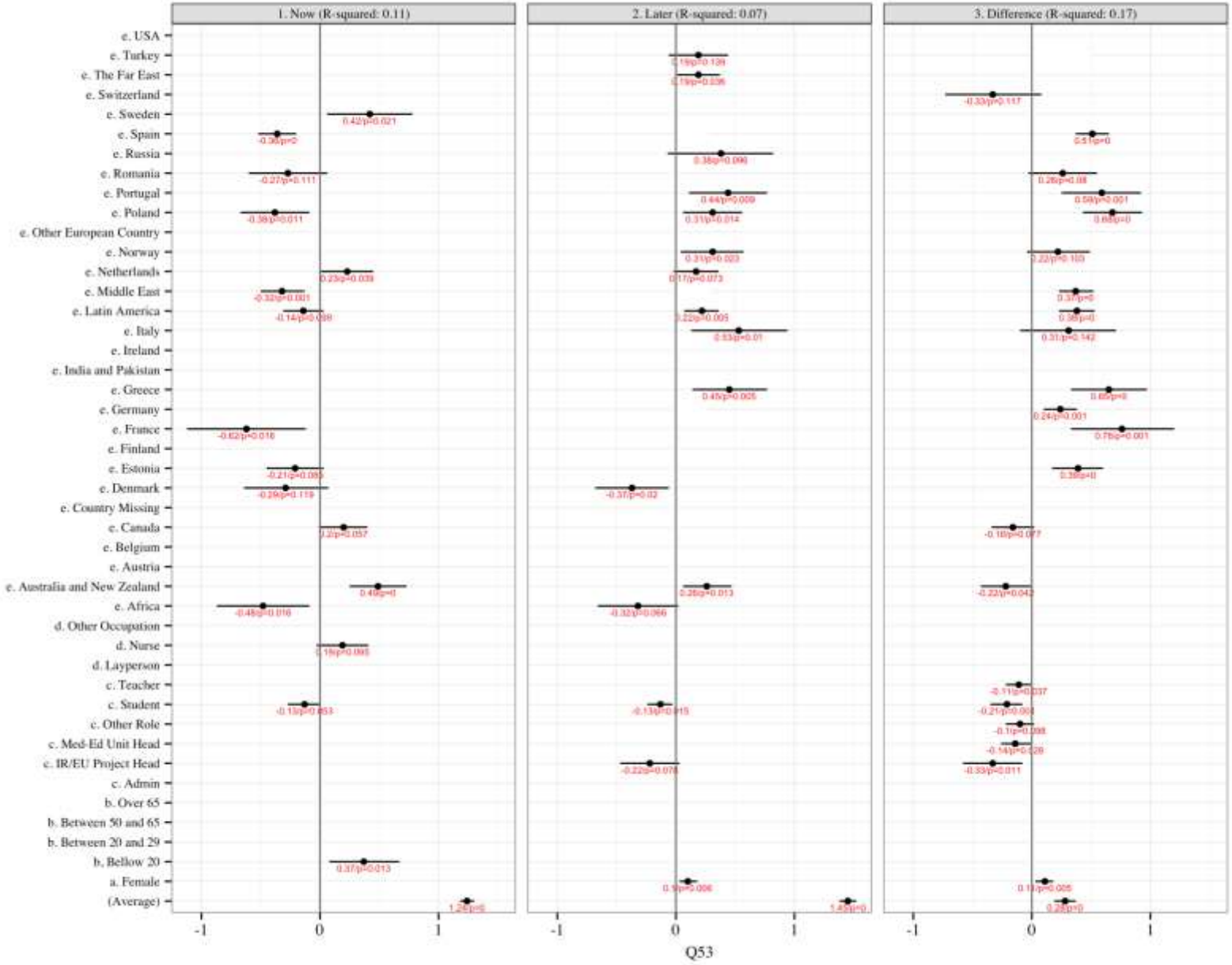

1: Now (R-squared: 0.13)
2: Later (R-squared: 0.11)
3: Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q48

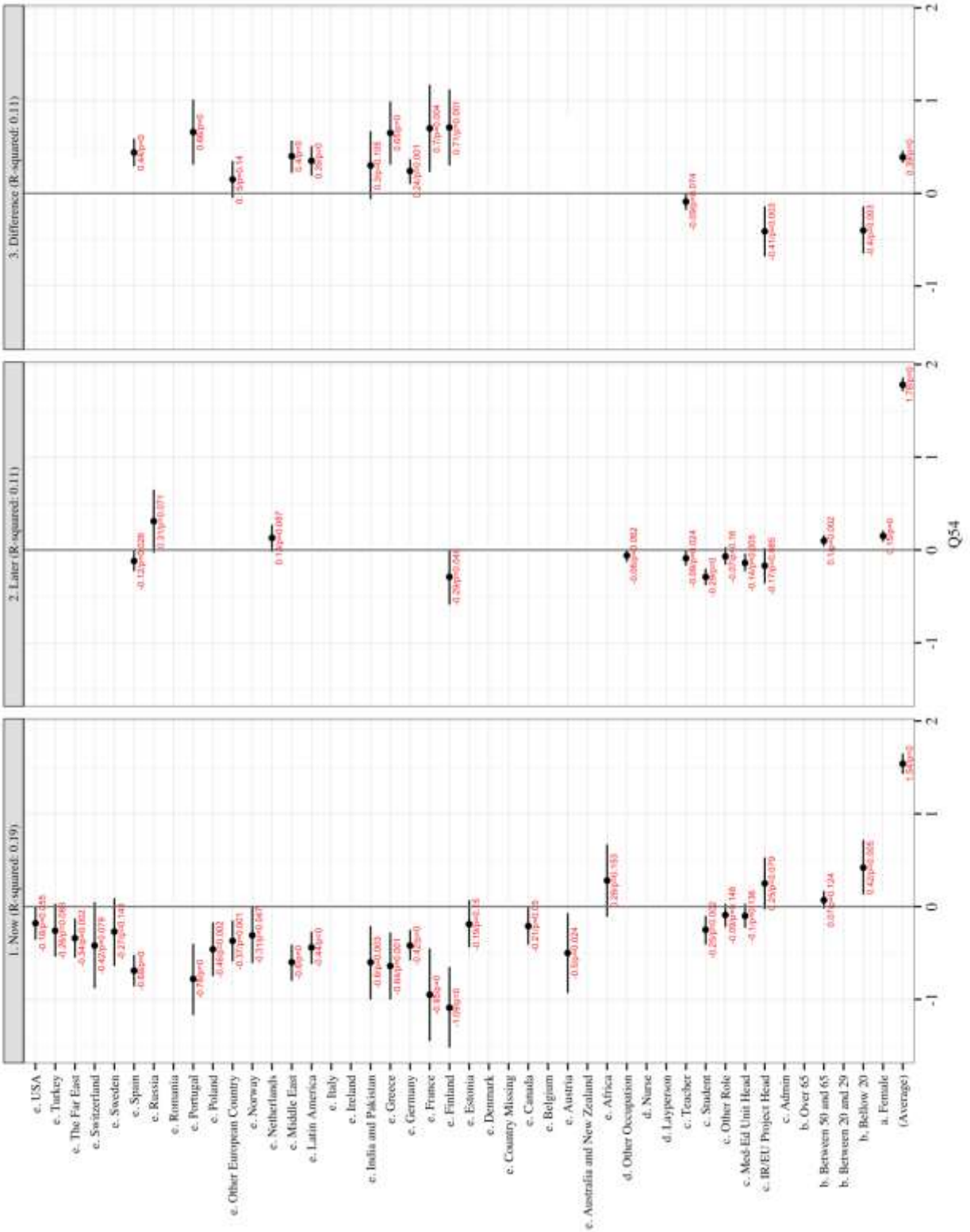

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.12)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q49

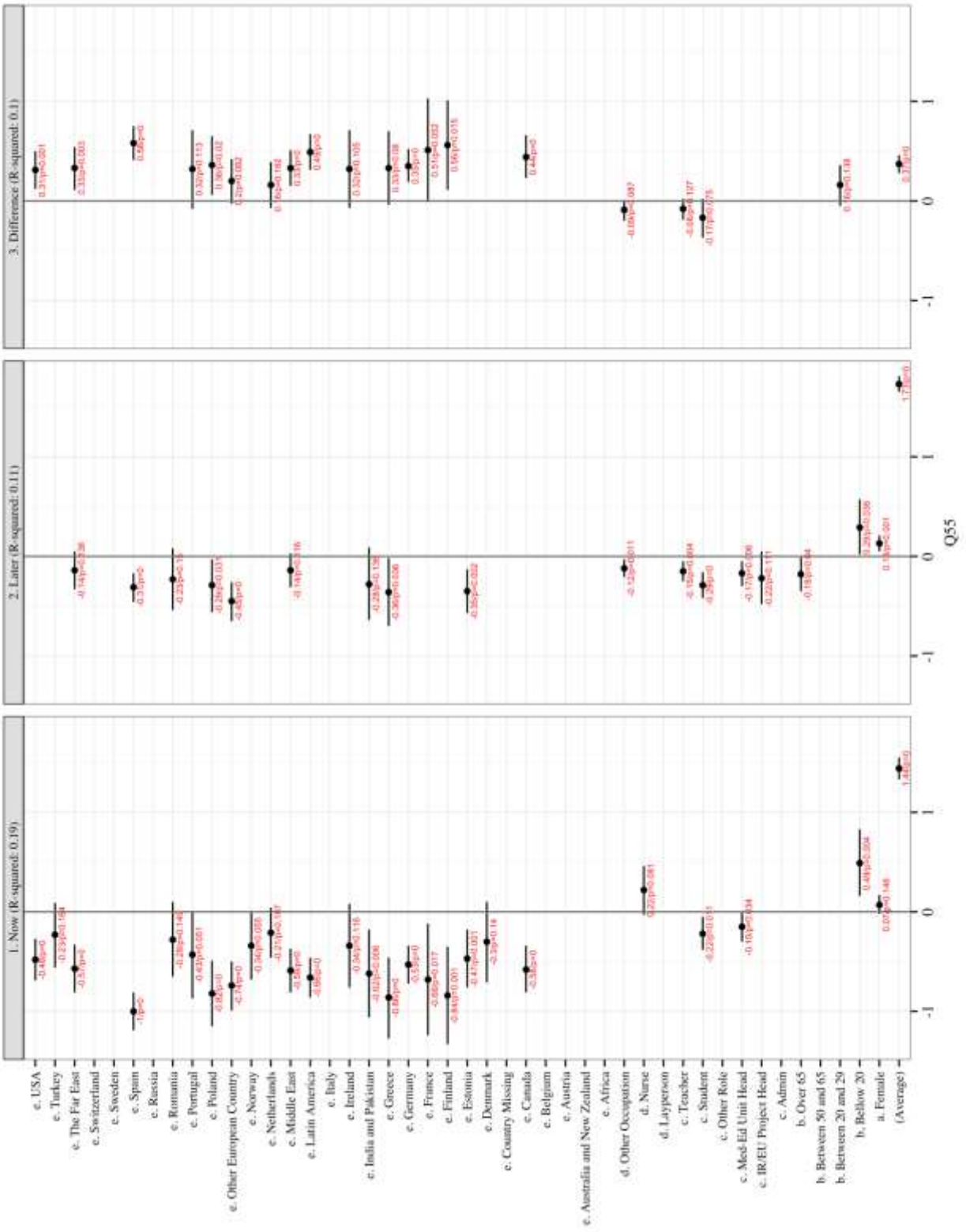

1. Now (R-squared: 0.09)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q50

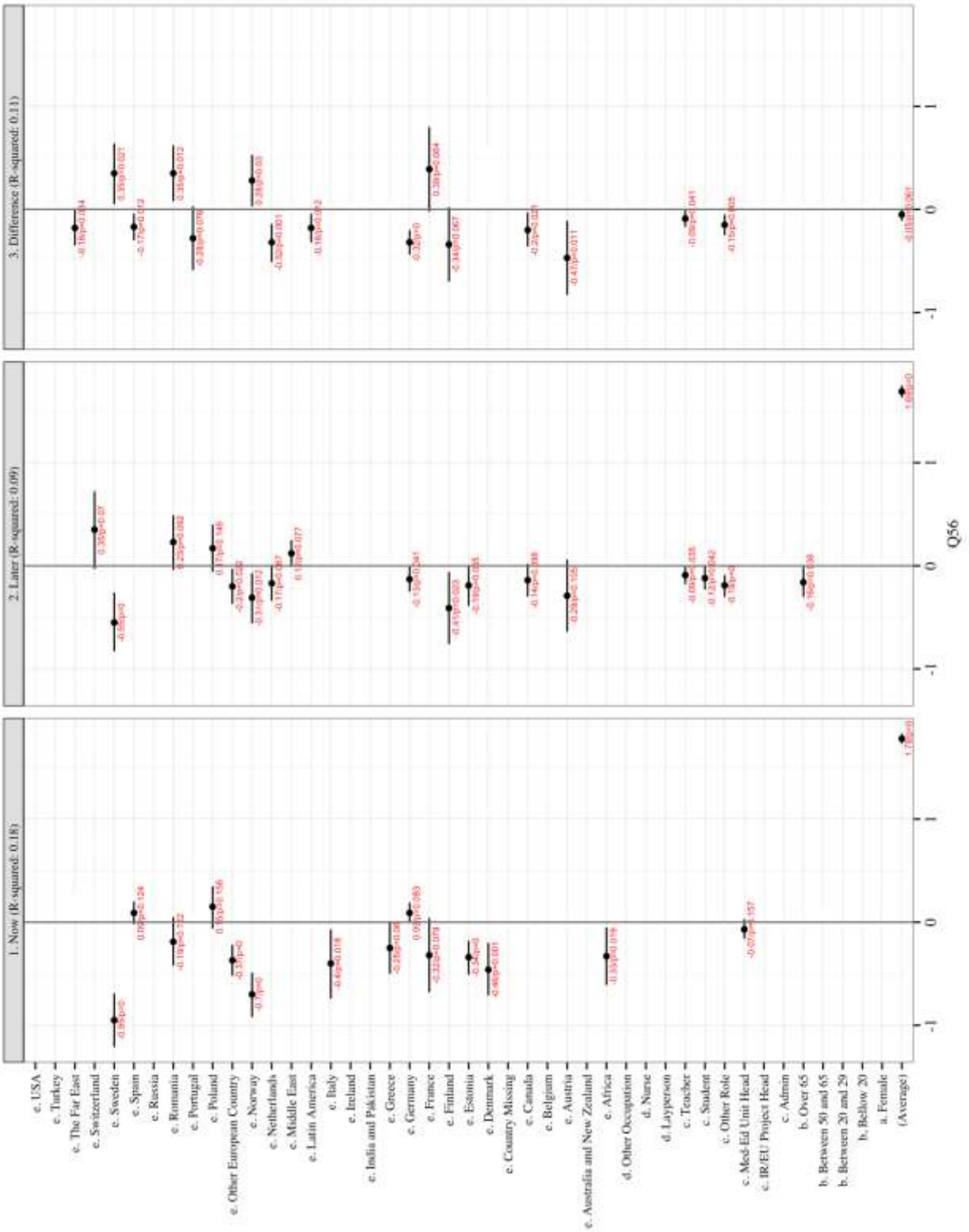

1. Now (R-squared: 0.11)
2. Later (R-squared: 0.1)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q51

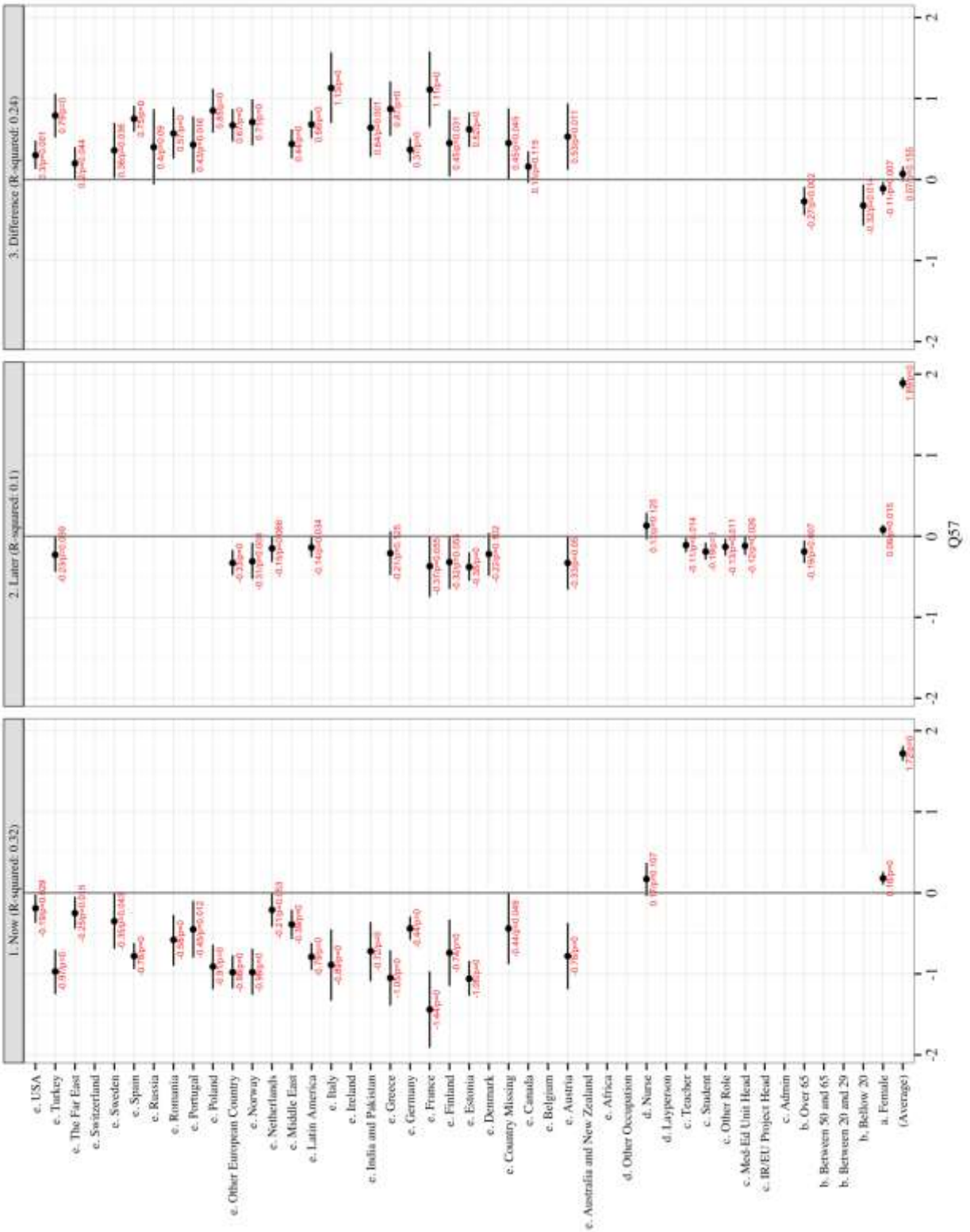

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.13)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q52

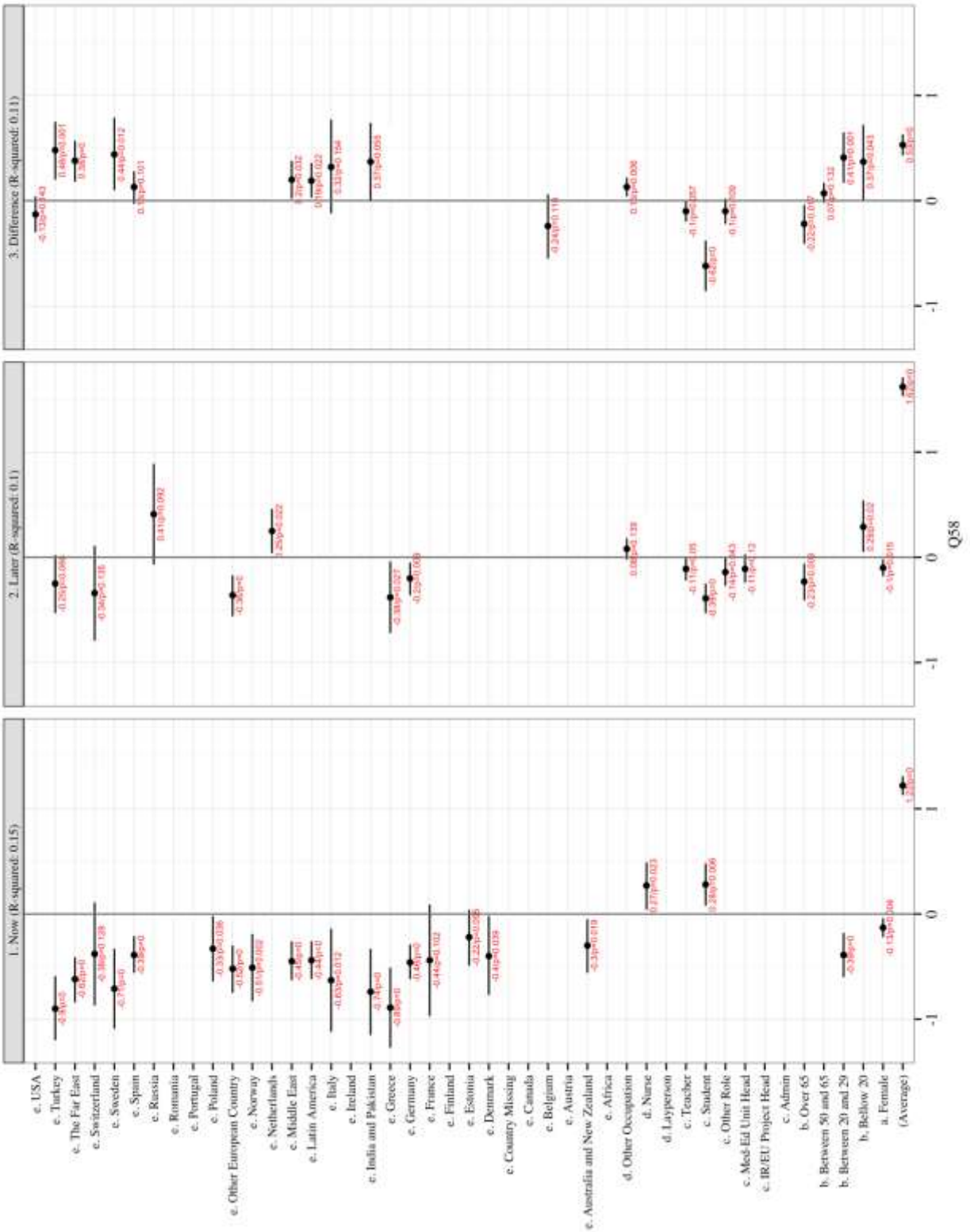

1. Now (R-squared: 0.11)
2. Later (R-squared: 0.07)
3. Difference (R-squared: 0.17)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q53

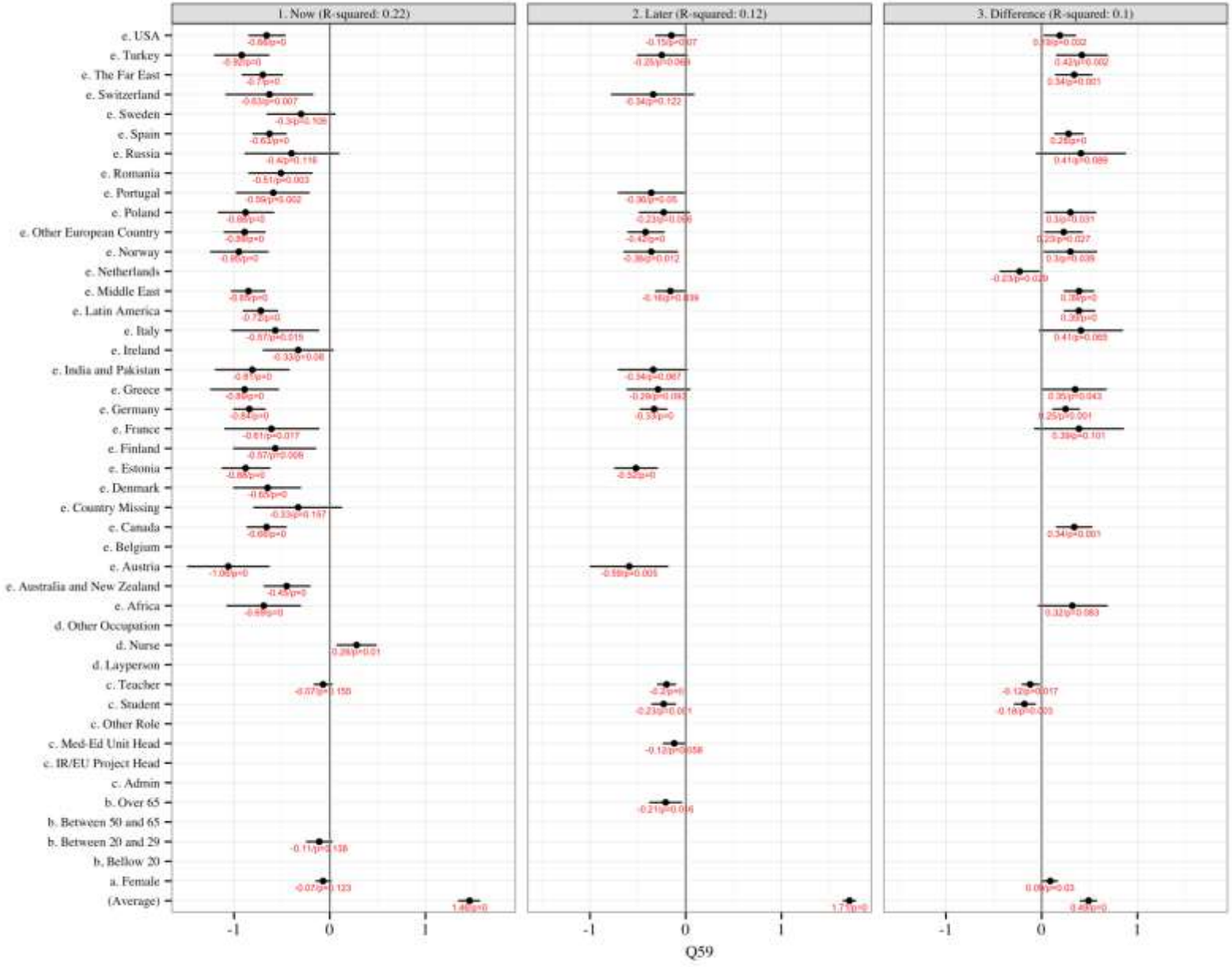

1: Now (R-squared: 0.19)
2: Later (R-squared: 0.11)
3: Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q54

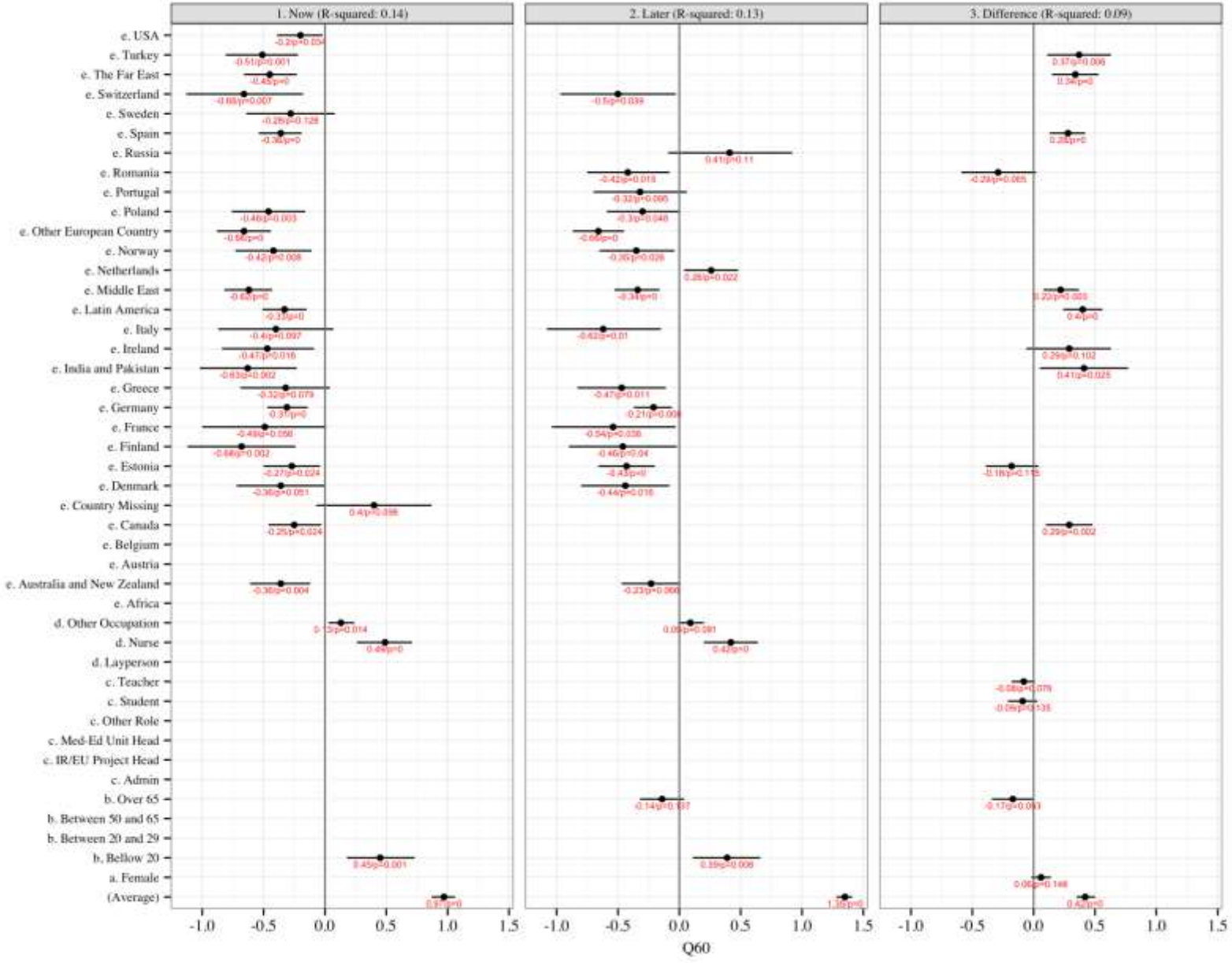

1. Now (R-squared: 0.19)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q55

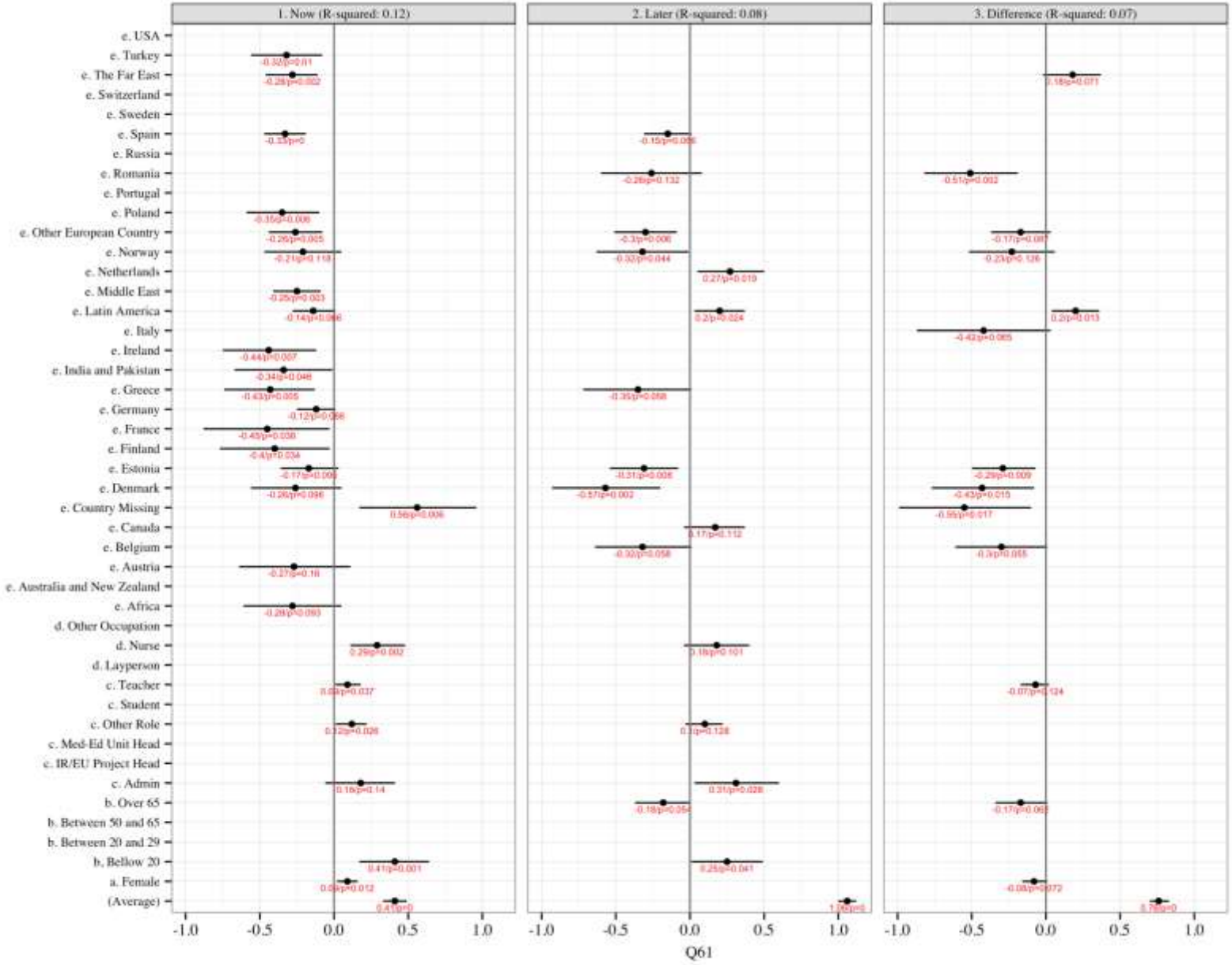

1: Now (R-squared: 0.18)
2: Later (R-squared: 0.09)
3: Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q56

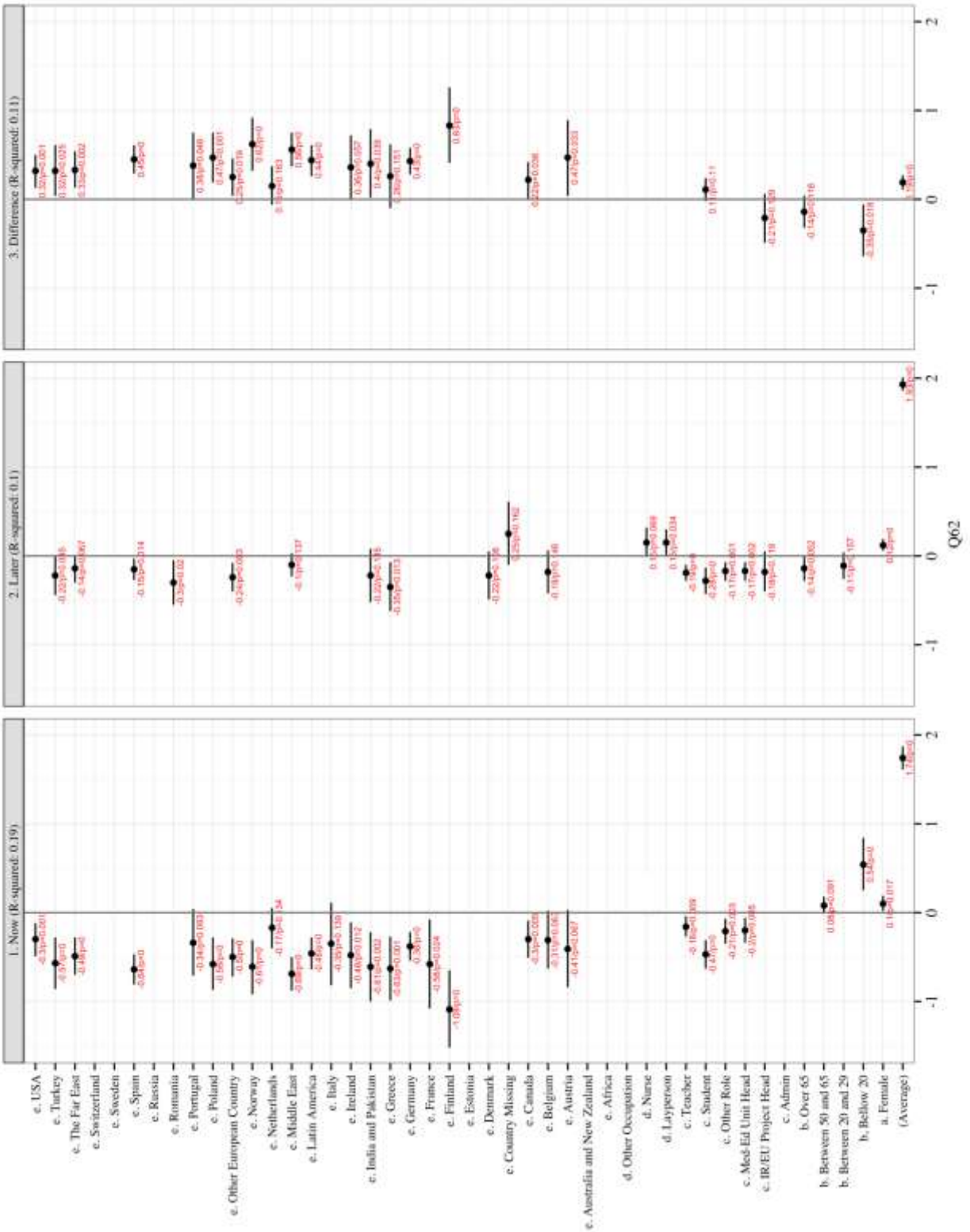

1: Now (R-squared: 0.32)
2: Later (R-squared: 0.11)
3: Difference (R-squared: 0.24)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-2
-1
0
1
2
Q57

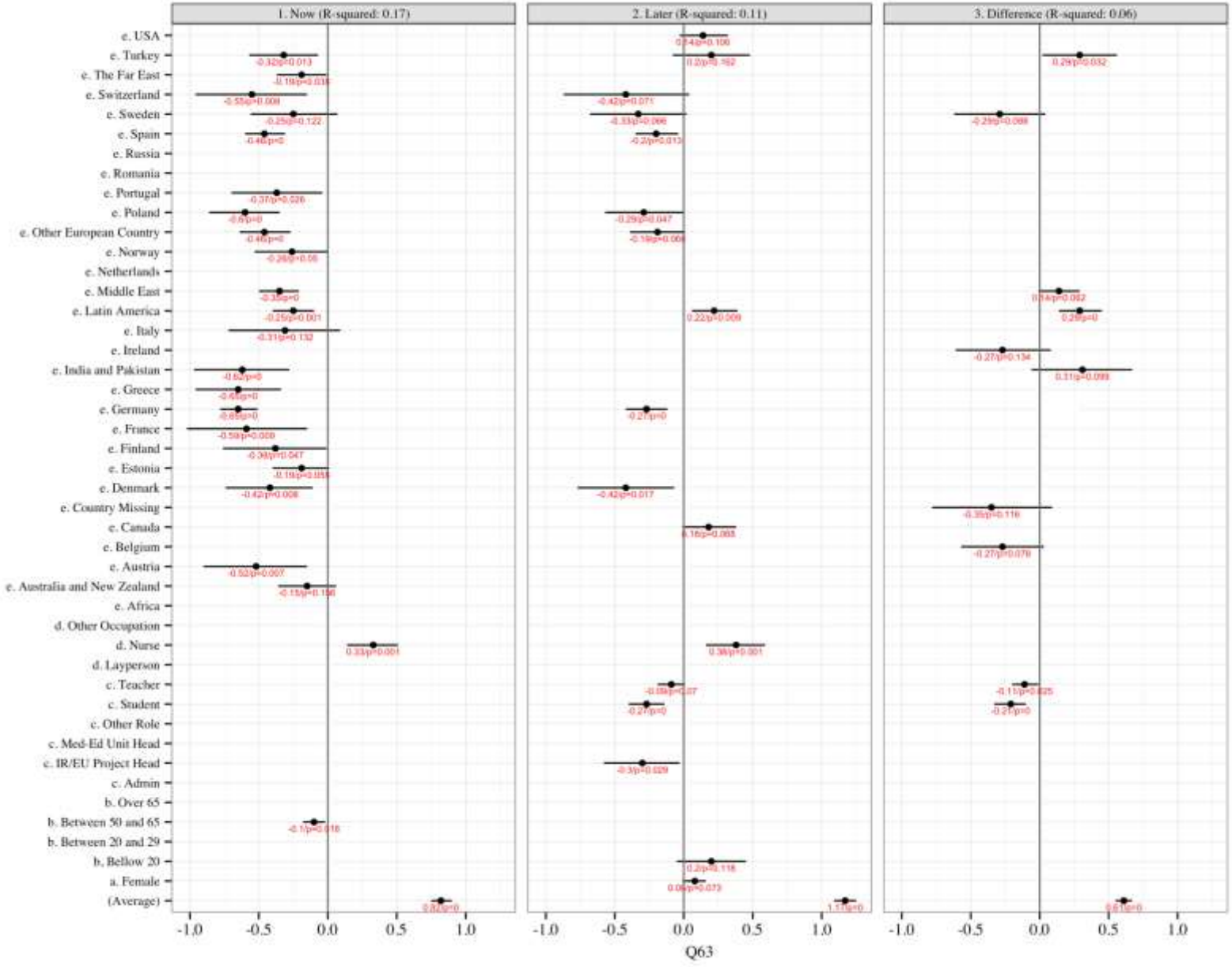

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q58

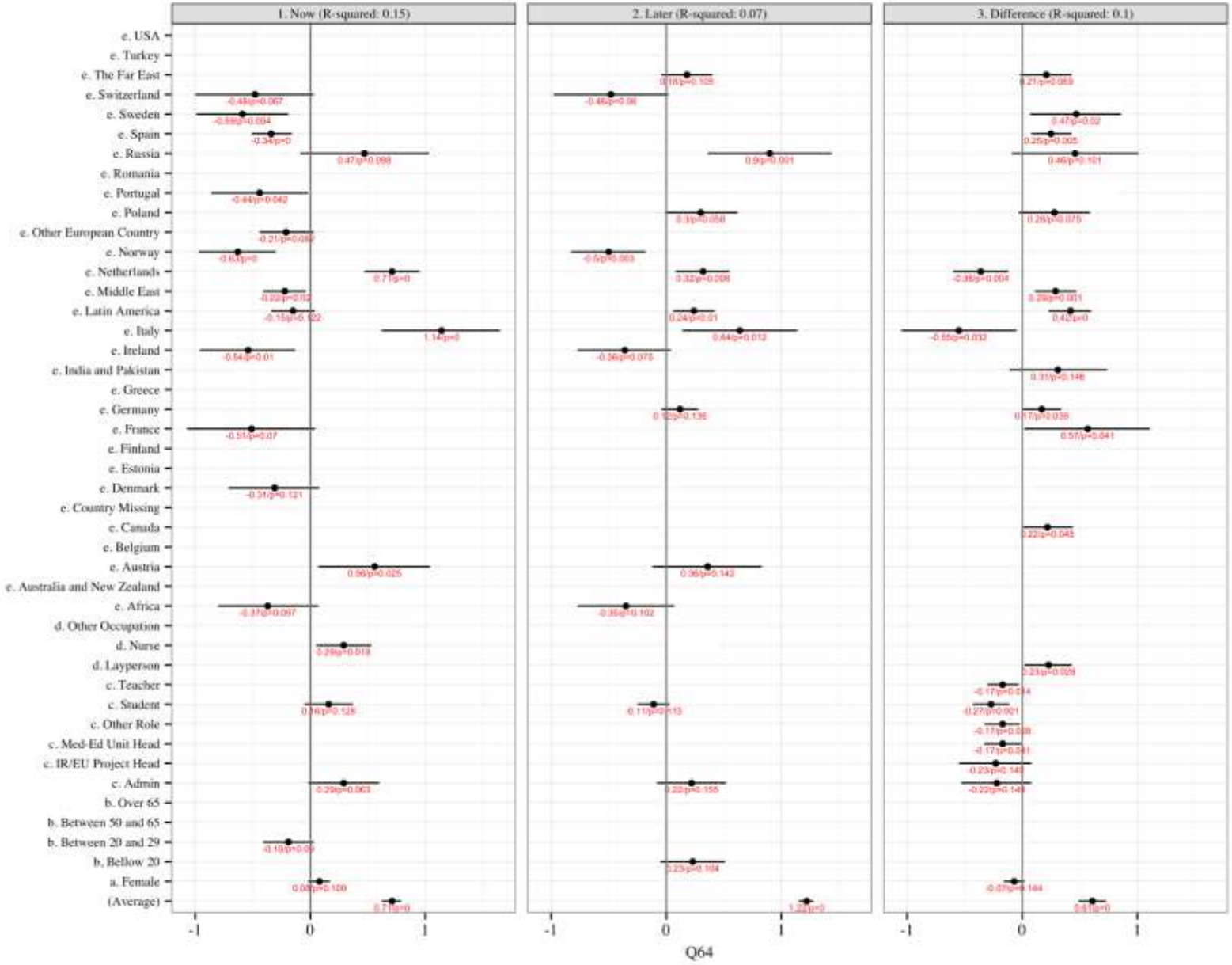

1. Now (R-squared: 0.22)
2. Later (R-squared: 0.12)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q59

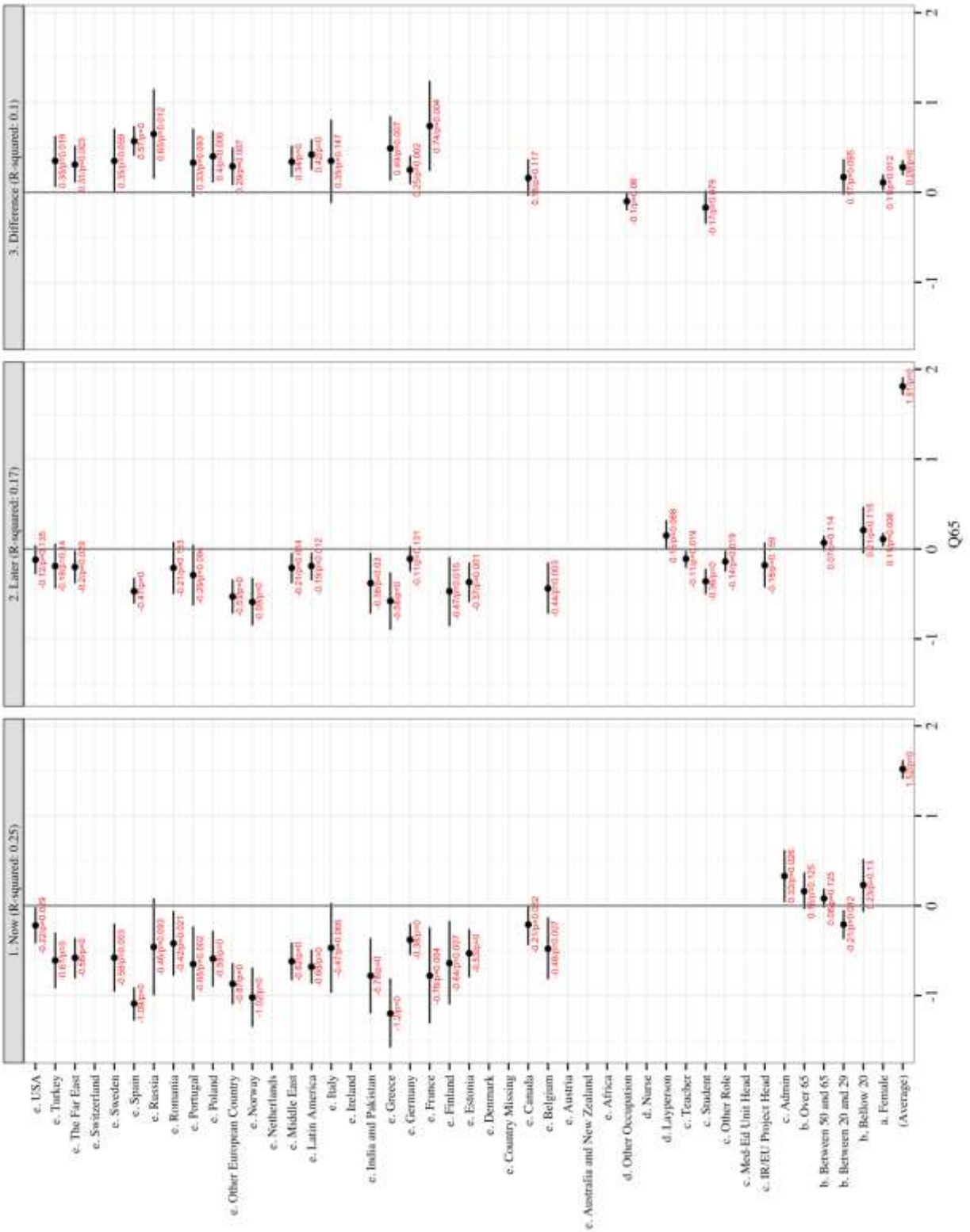

1. Now (R-squared: 0.14)
2. Later (R-squared: 0.13)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
1.5
Q60

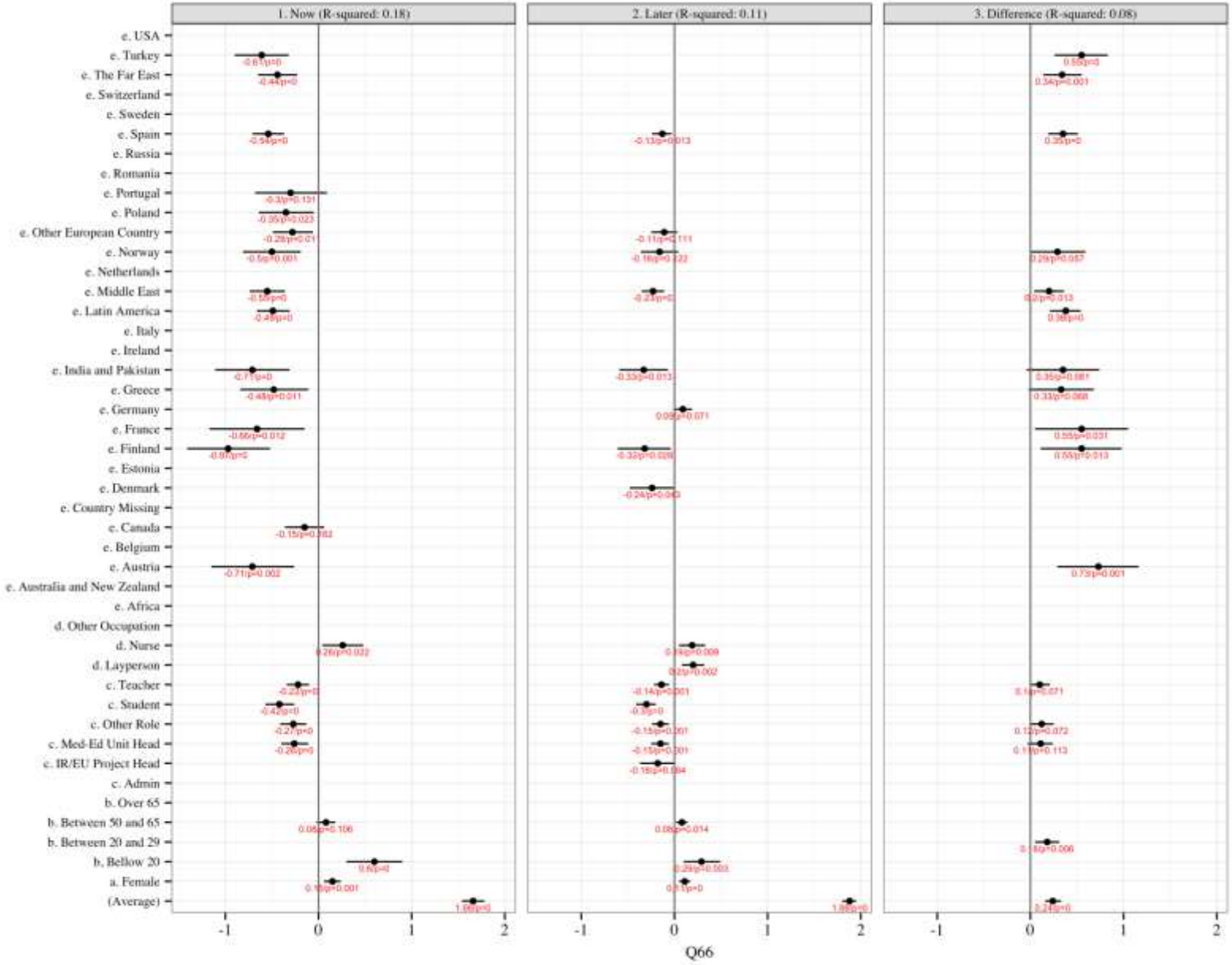

1. Now (R-squared: 0.12)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q61

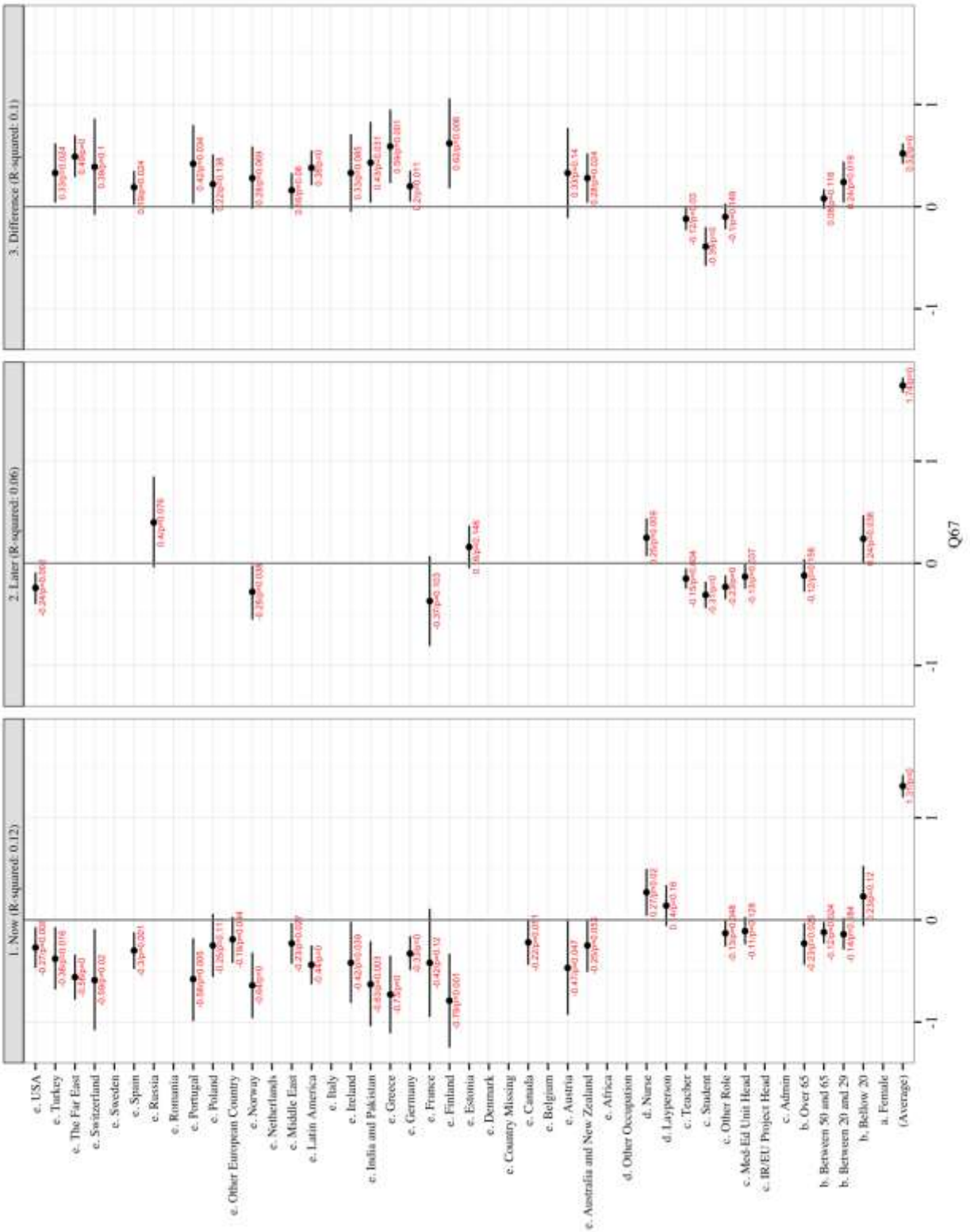

1. Now (R-squared: 0.19)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q62

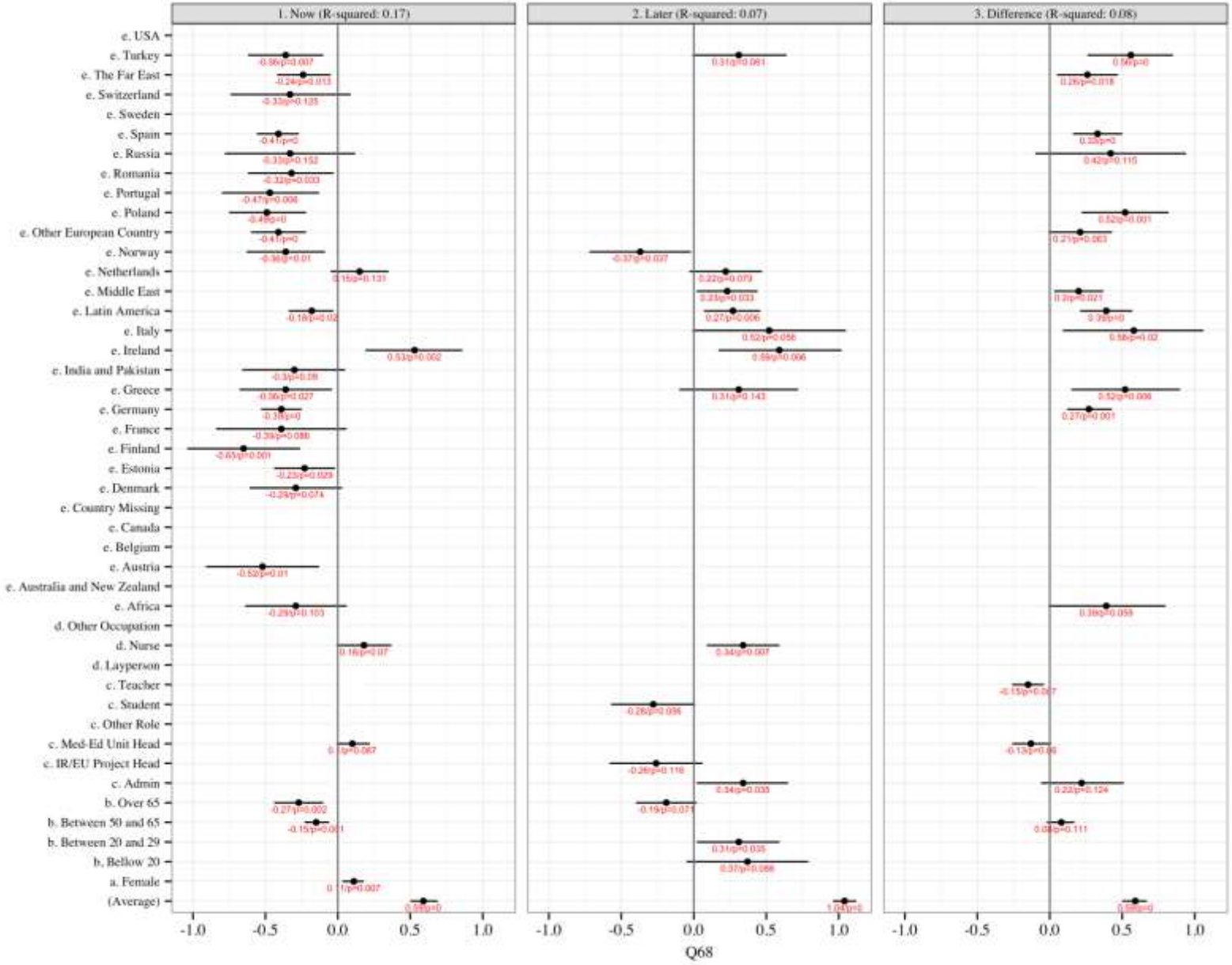

1. Now (R-squared: 0.17)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.06)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q63

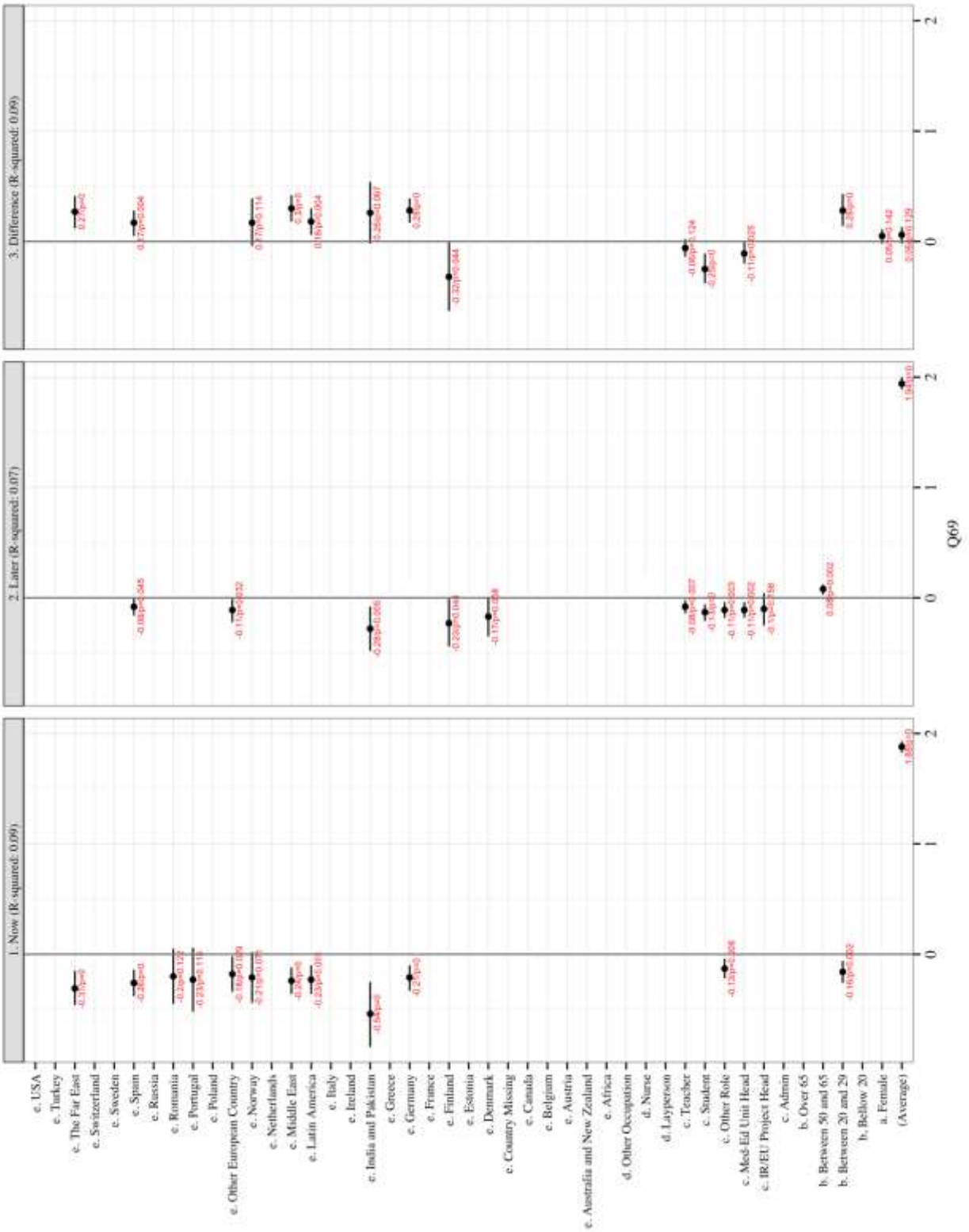

1. Now (R-squared: 0.15)
2. Later (R-squared: 0.07)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q64

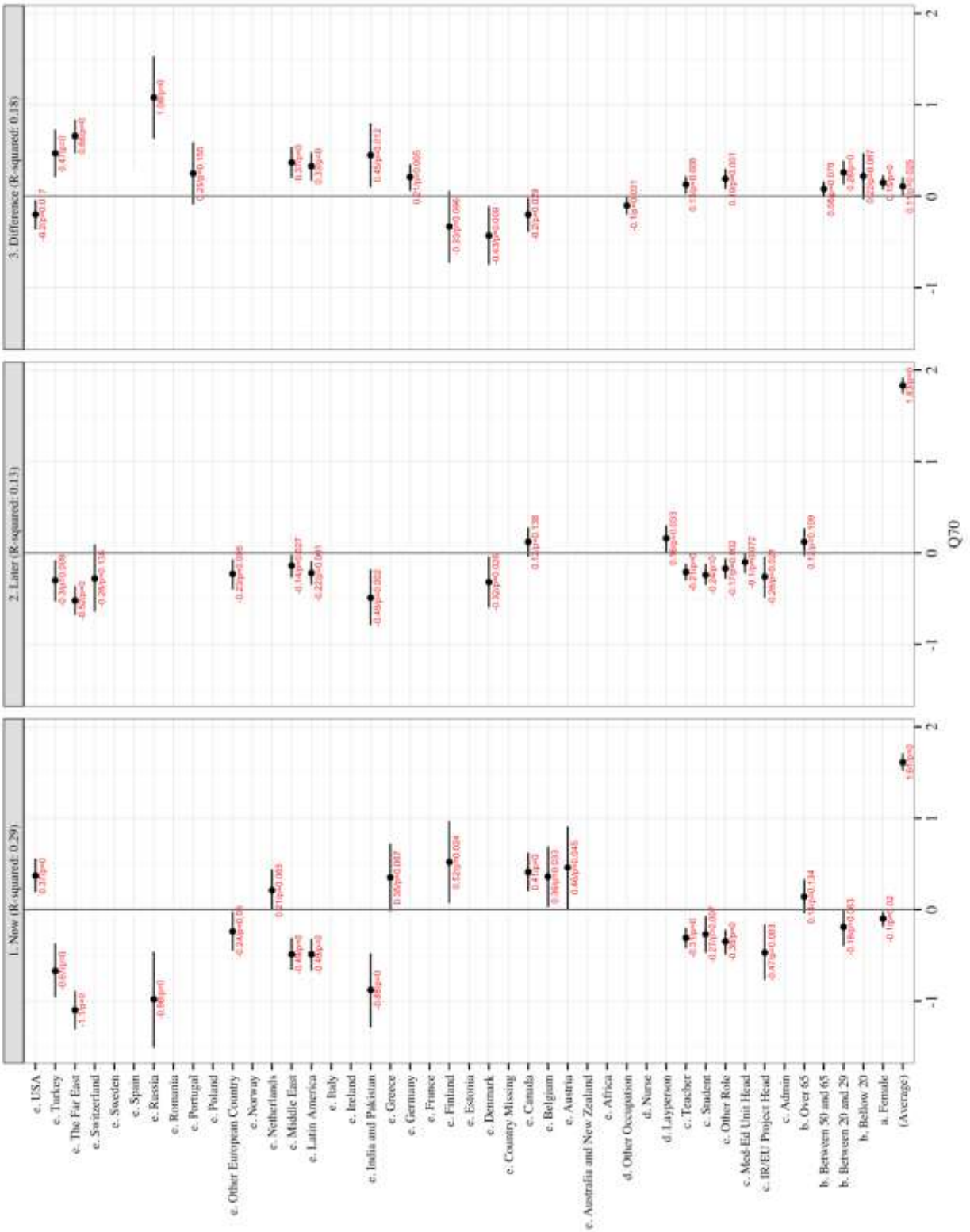

1. Now (R-squared: 0.25)
2. Later (R-squared: 0.17)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q65

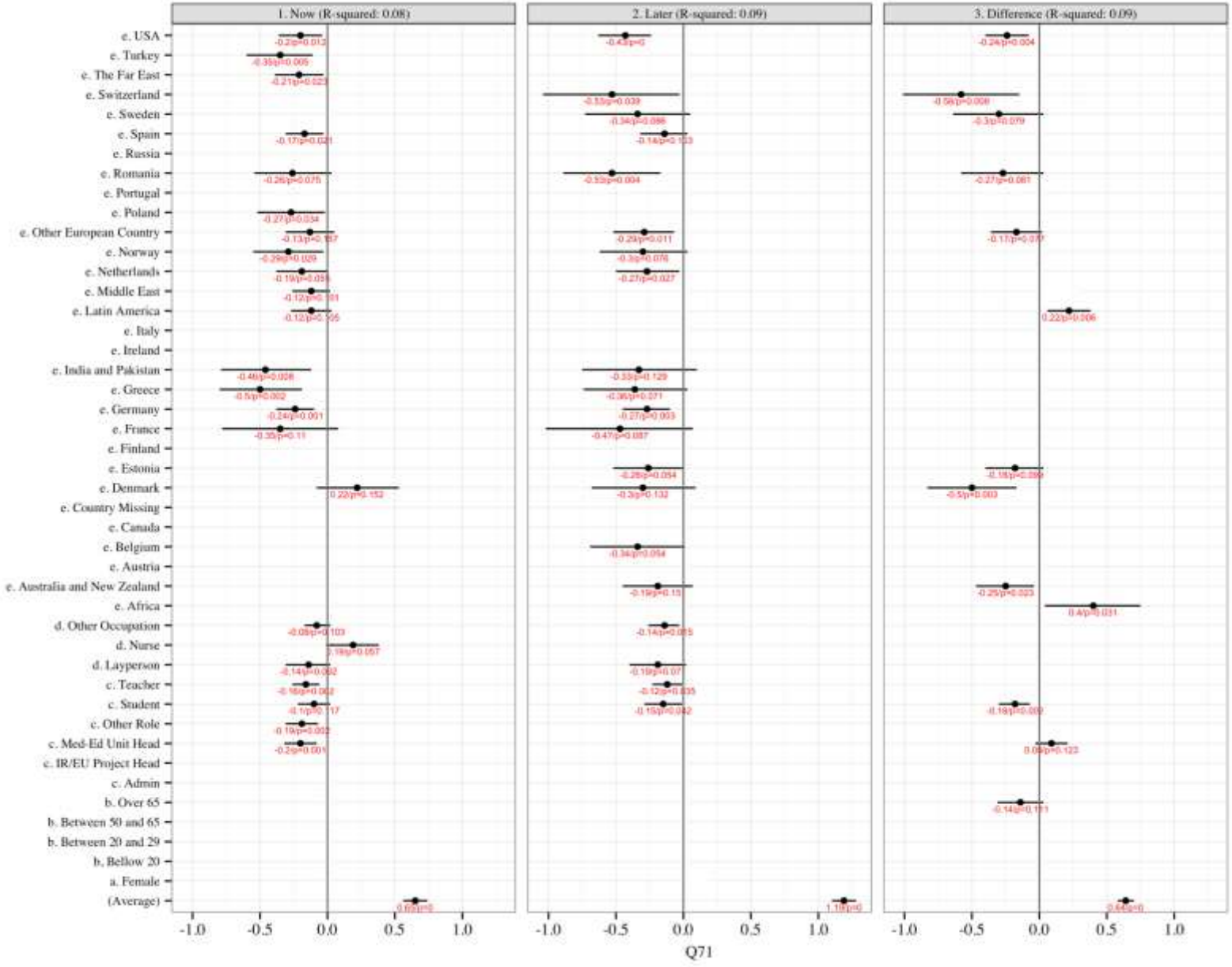

1. Now (R-squared: 0.18)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q66

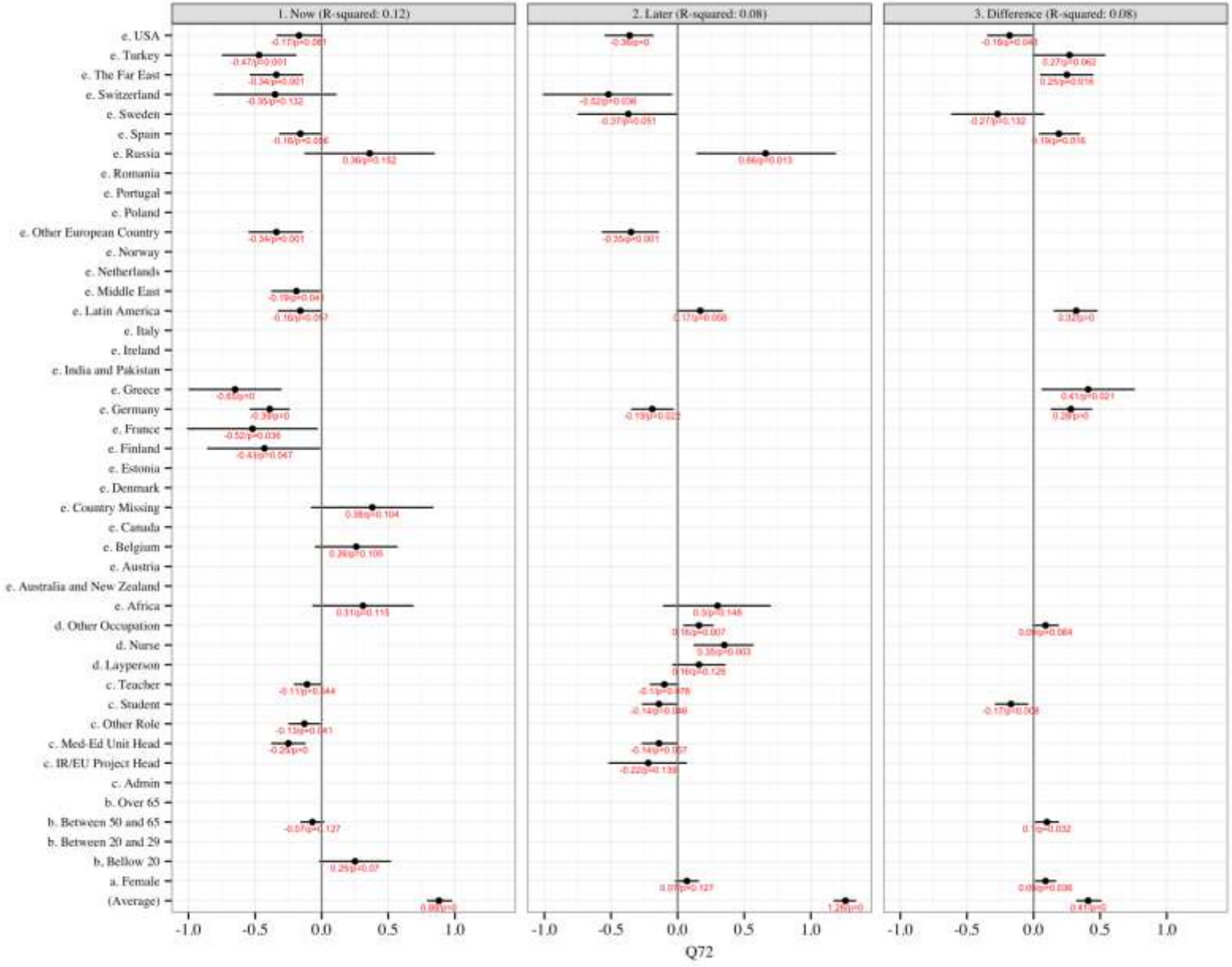

1. Now (R-squared: 0.12)
2. Later (R-squared: 0.06)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q67

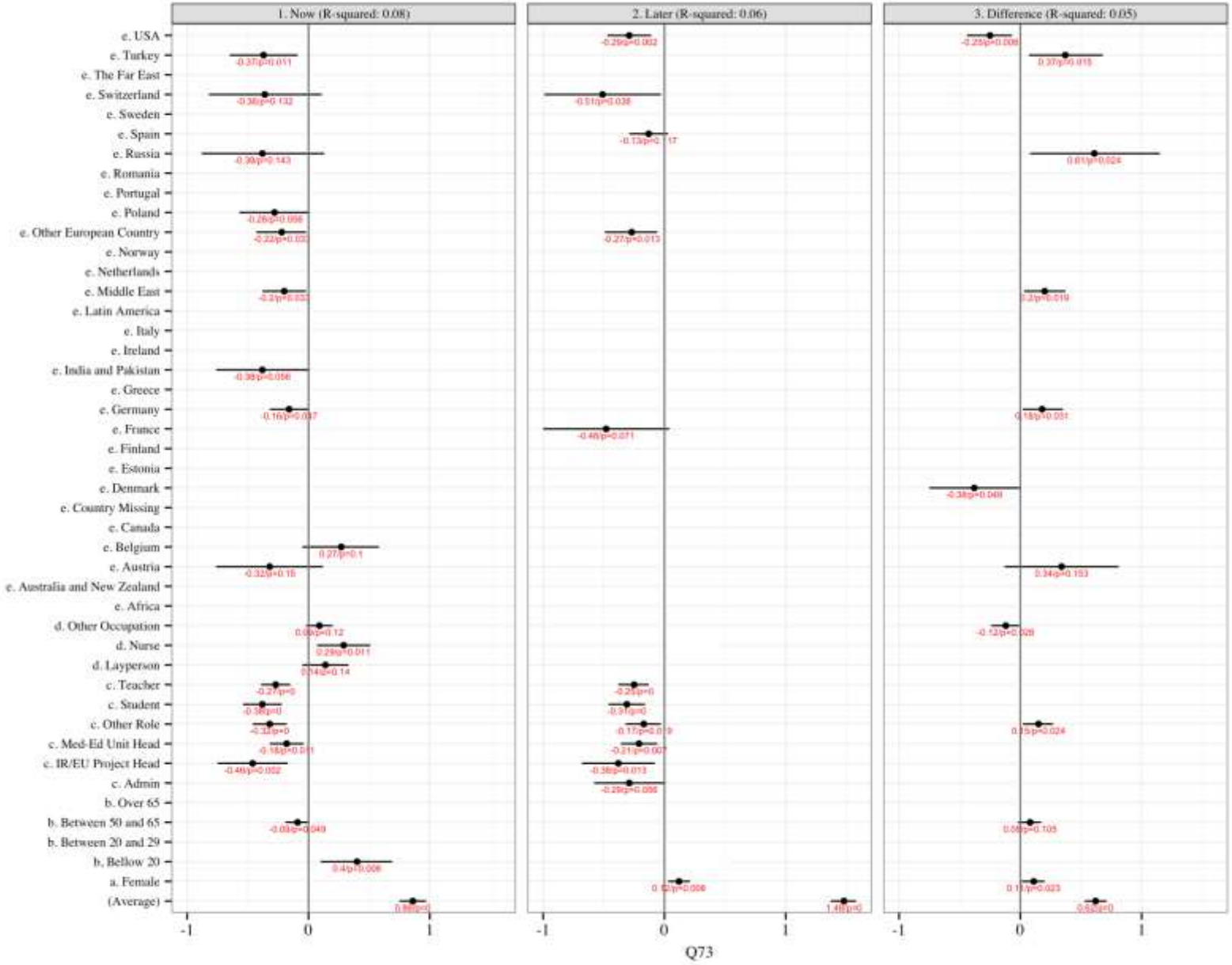

1. Now (R-squared: 0.17)
2. Later (R-squared: 0.07)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q68

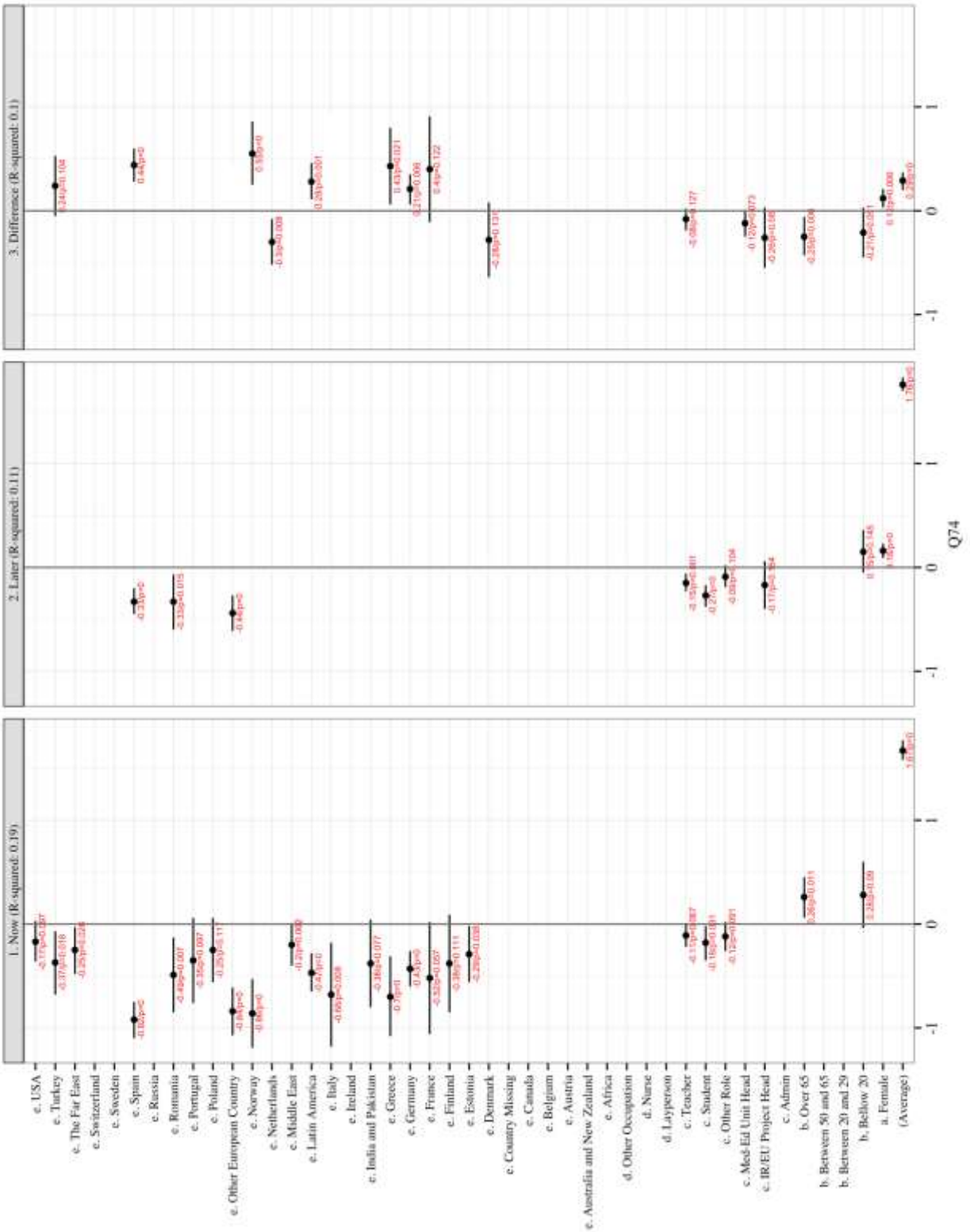

1: Now (R-squared: 0.09)
2: Later (R-squared: 0.07)
3: Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
0
1
2
Q69

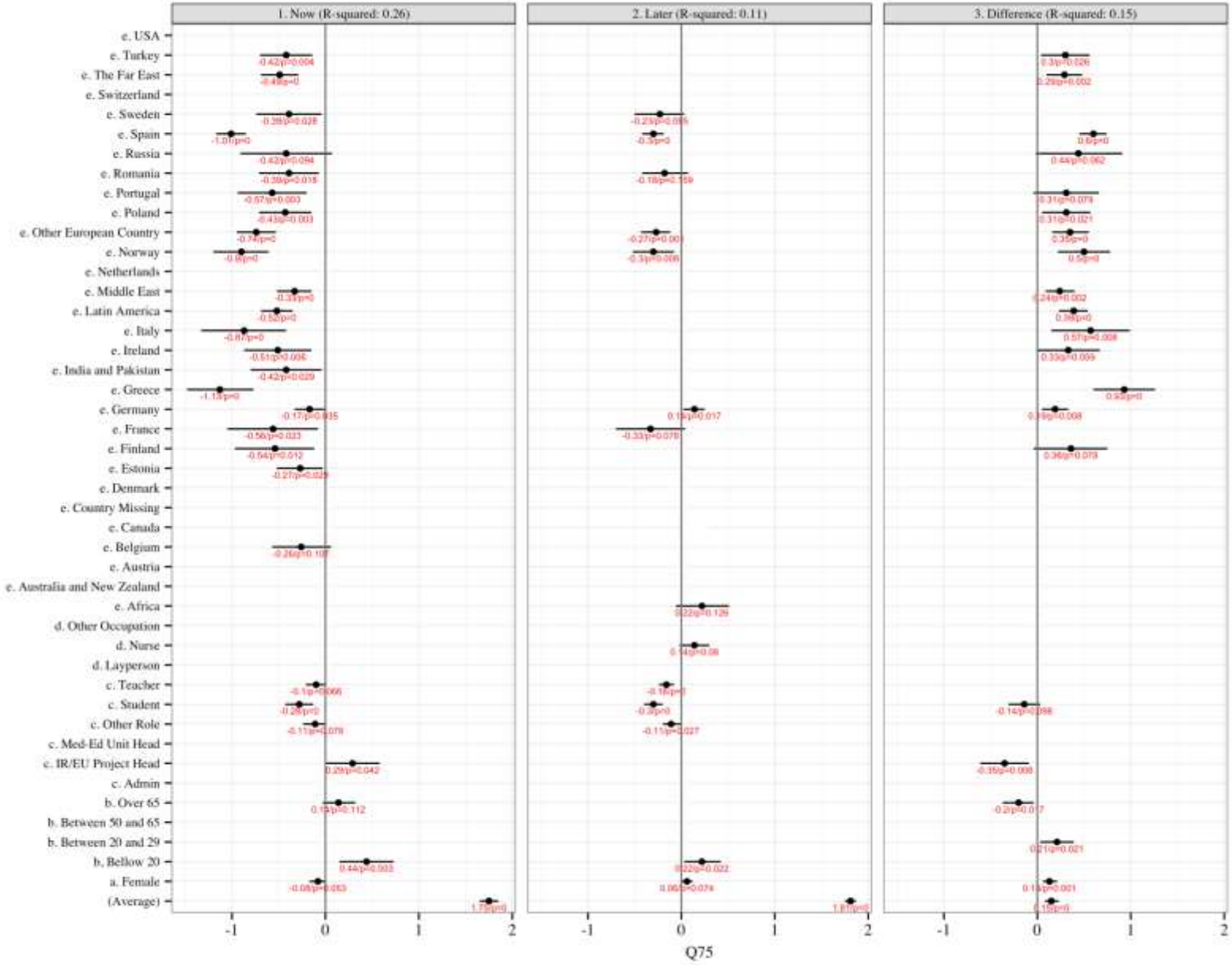

1: Now (R-squared: 0.29)
2: Later (R-squared: 0.13)
3: Difference (R-squared: 0.18)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
2
Q70

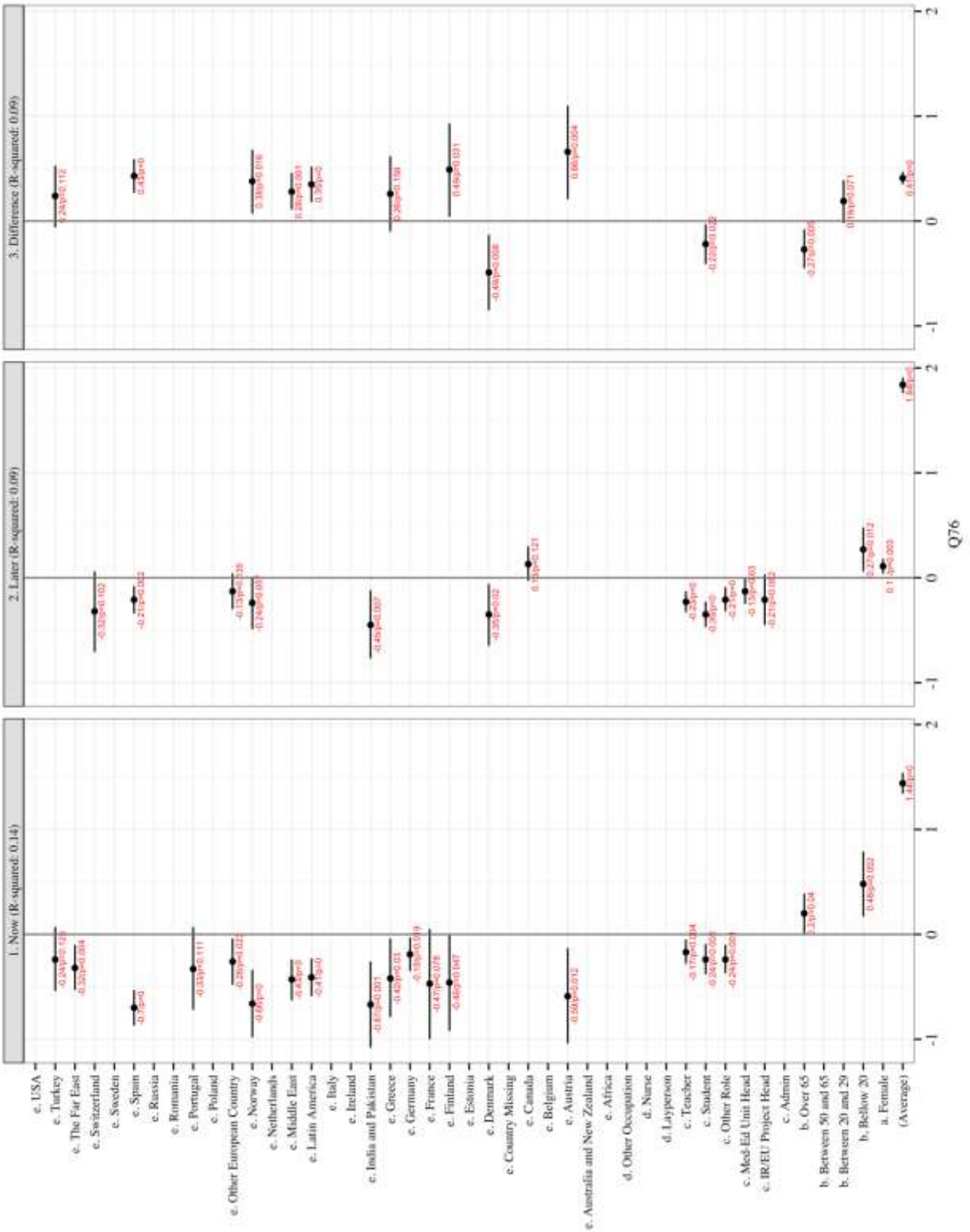

1. Now (R-squared: 0.08)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q71

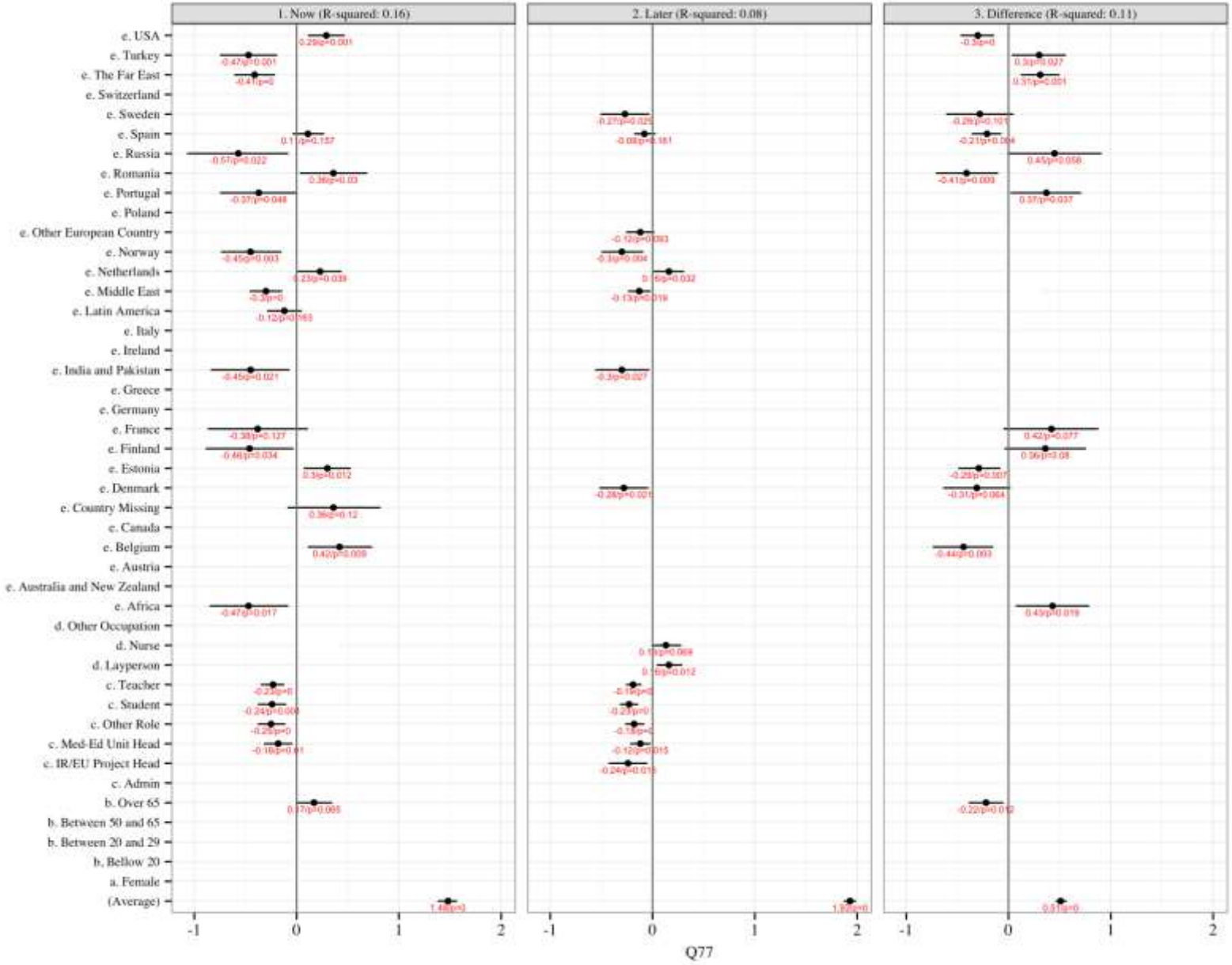

1. Now (R-squared: 0.12)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1.0
-0.5
0.0
0.5
1.0
Q72

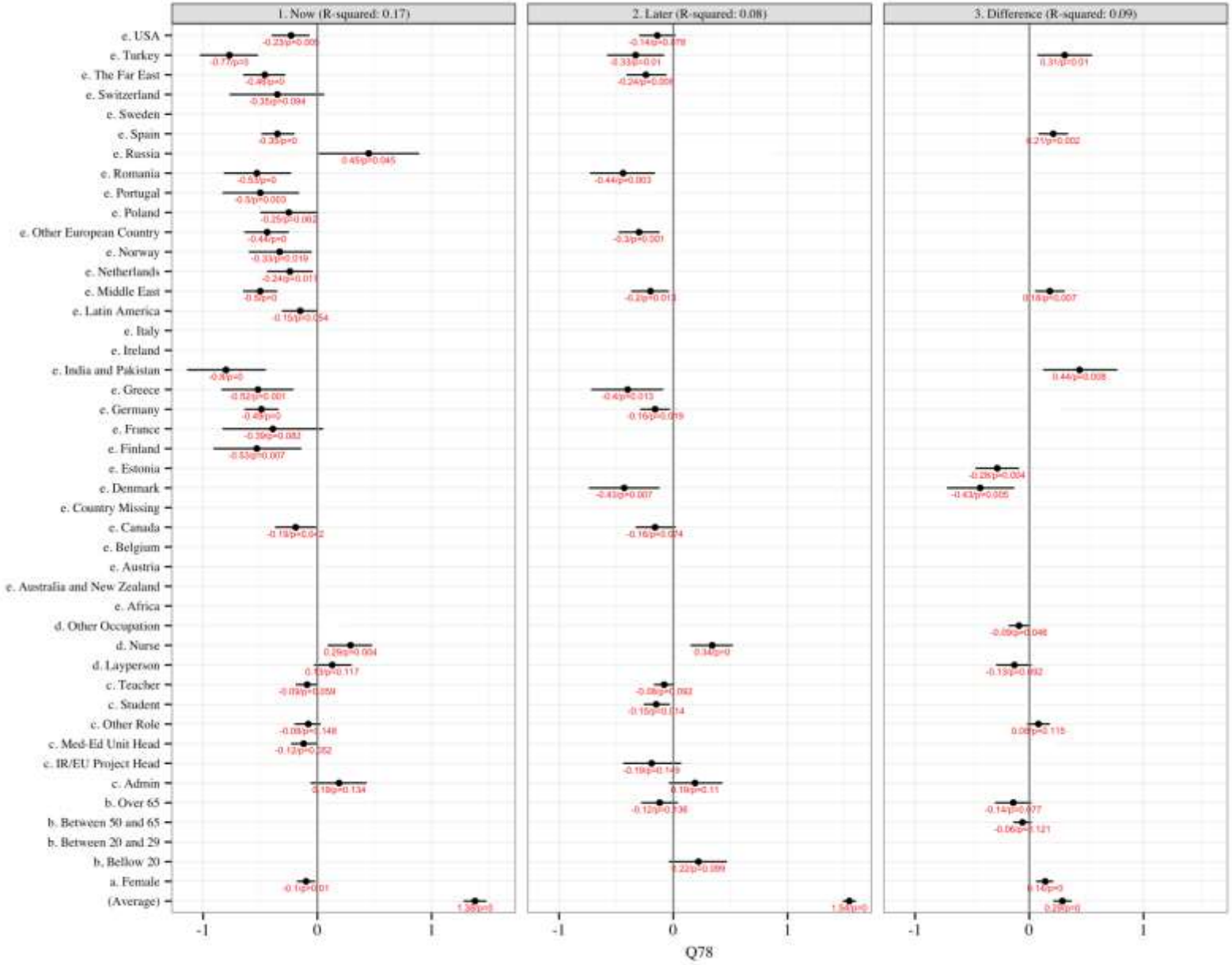

1. Now (R-squared: 0.08)
2. Later (R-squared: 0.06)
3. Difference (R-squared: 0.05)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q73

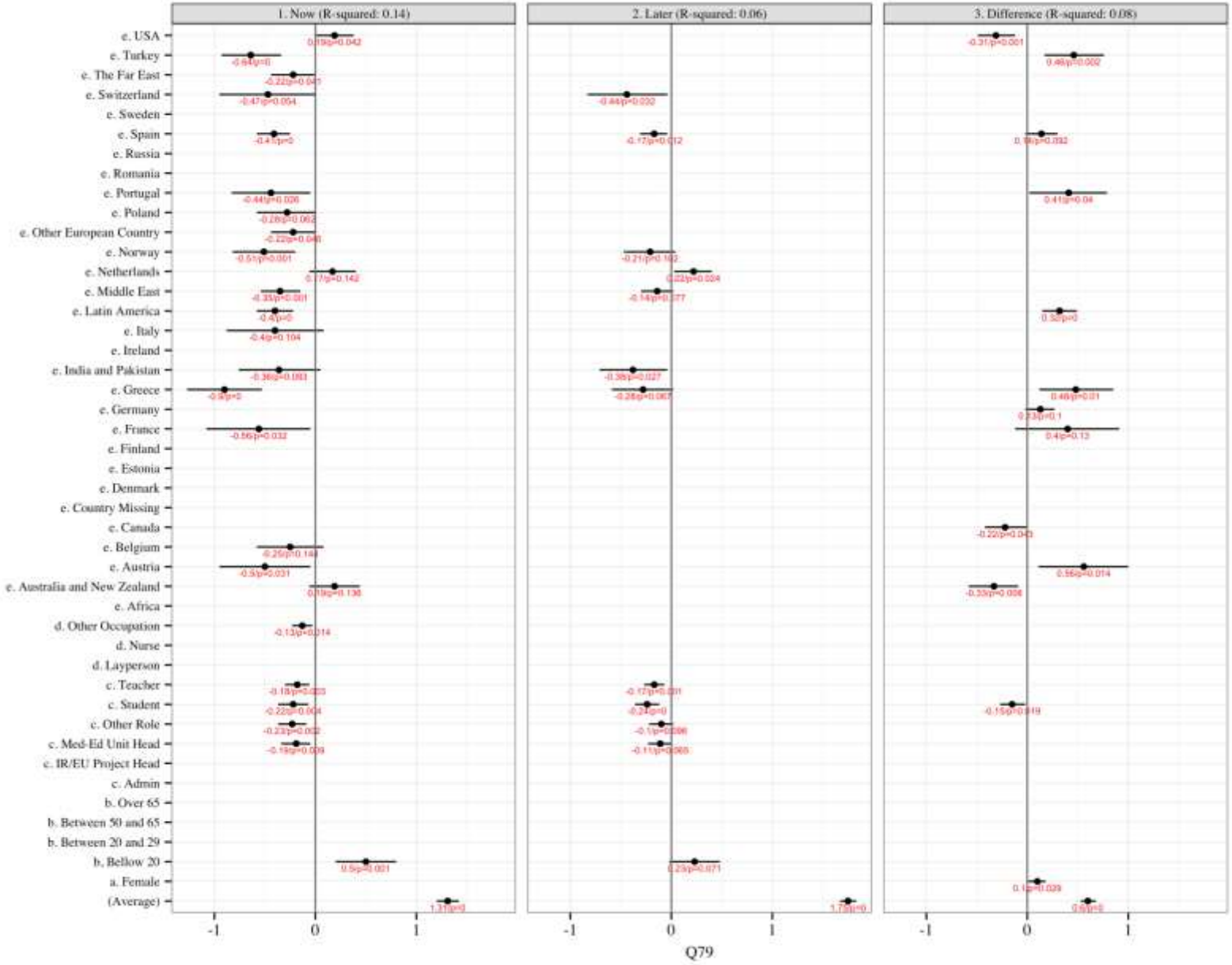

1. Now (R-squared: 0.19)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.1)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q74


1. Now (R-squared: 0.26)
2. Later (R-squared: 0.11)
3. Difference (R-squared: 0.15)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q75

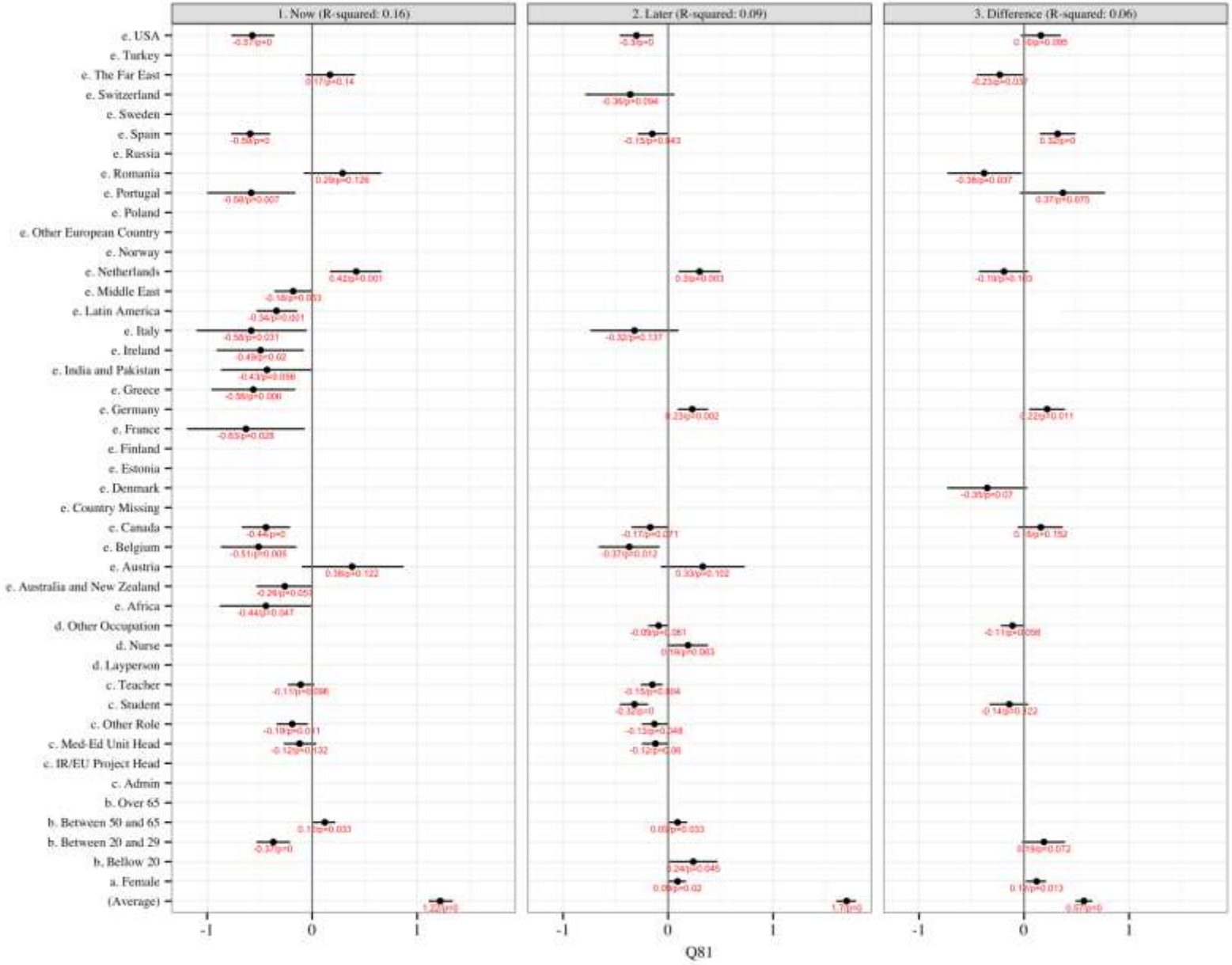

1: Now (R-squared: 0.14)
2: Later (R-squared: 0.09)
3: Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
Q76

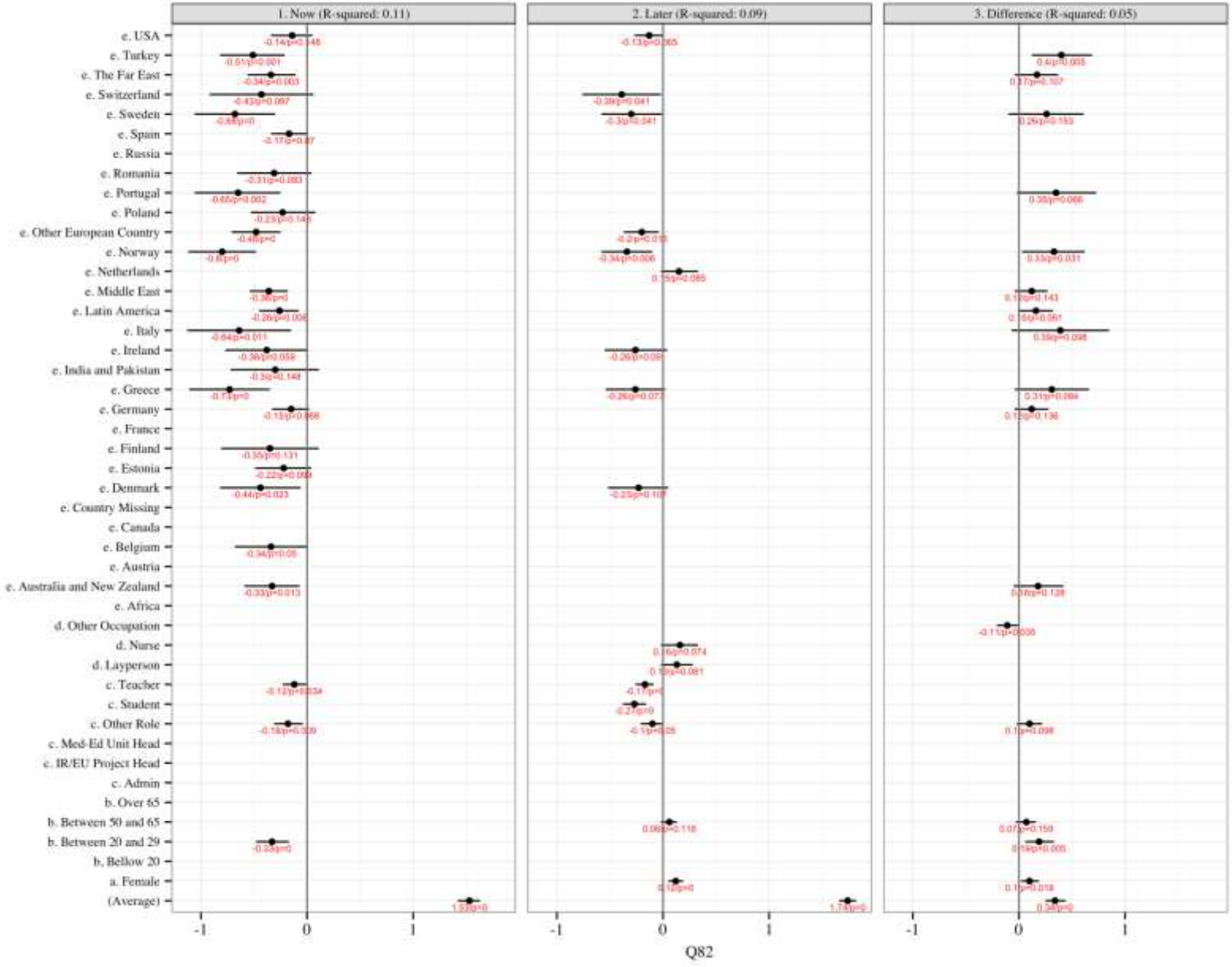

1. Now (R-squared: 0.16)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.11)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
2
Q77


1. Now (R-squared: 0.17)
2. Later (R-squared: 0.08)
3. Difference (R-squared: 0.09)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q78


1. Now (R-squared: 0.14)
2. Later (R-squared: 0.06)
3. Difference (R-squared: 0.08)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q79

1: Now (R-squared: 0.15)
2: Later (R-squared: 0.08)
3: Difference (R-squared: 0.07)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Below 20
a. Female
(Average)
-1
0
1
Q80


1. Now (R-squared: 0.16)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.06)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q81


1. Now (R-squared: 0.11)
2. Later (R-squared: 0.09)
3. Difference (R-squared: 0.05)
e. USA
e. Turkey
e. The Far East
e. Switzerland
e. Sweden
e. Spain
e. Russia
e. Romania
e. Portugal
e. Poland
e. Other European Country
e. Norway
e. Netherlands
e. Middle East
e. Latin America
e. Italy
e. Ireland
e. India and Pakistan
e. Greece
e. Germany
e. France
e. Finland
e. Estonia
e. Denmark
e. Country Missing
e. Canada
e. Belgium
e. Austria
e. Australia and New Zealand
e. Africa
d. Other Occupation
d. Nurse
d. Layperson
c. Teacher
c. Student
c. Other Role
c. Med-Ed Unit Head
c. IR/EU Project Head
c. Admin
b. Over 65
b. Between 50 and 65
b. Between 20 and 29
b. Bellow 20
a. Female
(Average)
-1
0
1
Q82

Appendix 8 - List of Members: Work Package 5 – Curriculum Trends in Medical Education in Europe in the 21st Century

Member	Institution
Ronald Harden (Leader)	AMEE, UK
Pat Lilley (Deputy)	AMEE, UK
Madalena Patrício	University of Lisbon, Portugal
Hilde Groenen	Catholic University of Leuven, Belgium
Katie Petty-Saphon	Medical Schools Council, UK
Joan Ribera	Faculty of Medicine Lleida, Catalonia
Tony Redmond	Manchester University, UK
Angela Borda	University of Tirgu Mures, Romania
Christodoulos Fiordellis	University of Patras, Greece
Cees van der Vleuten	Maastricht University, the Netherlands
M Luisa Canals	Sociedad Española de Medicina Maritima, Spain
Sibylle Soboll	Heinrich-Heine-University, Dűsseldorf, Germany
Sabri Kemahli	Ankara University, Turkey
Jūratė Šipylaitė	Vilnius University, Lithuania
Anders Baerheim	University of Bergen, Norway
Ulrike von Wolffersdorff	Technische Universität Műnchen, Germany
Manuel João Costa	University of Minho, Portugal

Other members of the Thematic Network contributed to the discussion.