



SDG 16.6.2

Factors Related to Perceptions on Health and Education Services in Europe and Africa

UNDP Oslo Governance Centre

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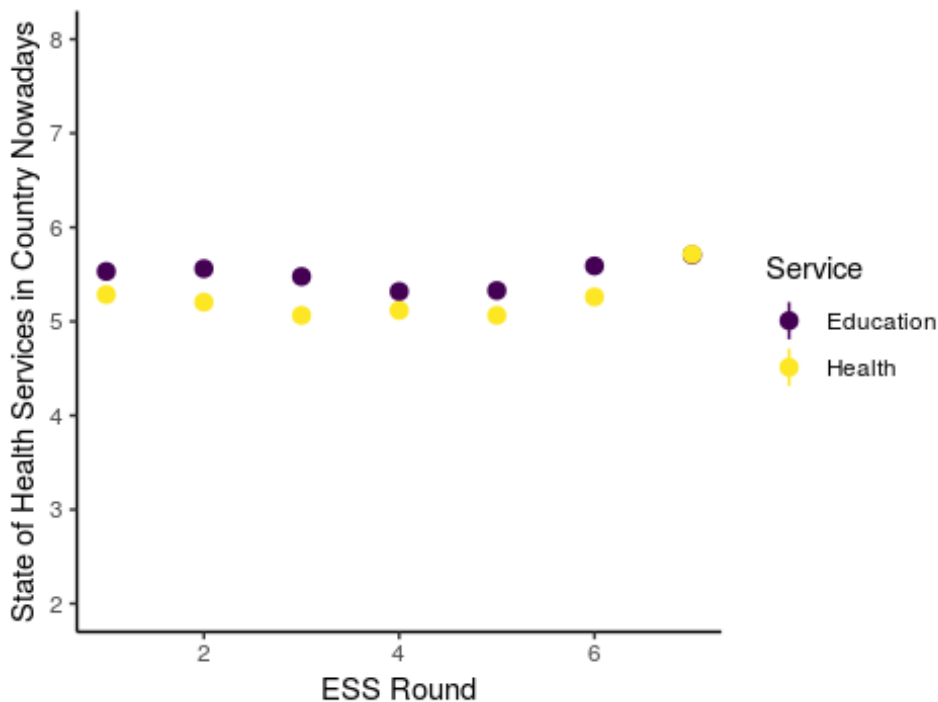
Introduction

The following research was undertaken to inform the metadata development for global indicator “SDG 16.6.2: Proportion of population satisfied with their last experience of public services” which focuses on three public service delivery areas, namely health, education and administrative services. The task was to draw from relevant accessible datasets, in this case from the Afrobarometer and the European Quality of Life Survey, and on the basis of statistical analysis, to determine the main ‘drivers’ of overall satisfaction (e.g. geographic proximity, affordability, courtesy, etc.) in two of the service areas for which data is readily available – health and education. Furthermore, on the basis of this empirical analysis, the research also makes recommendations for the final set of questions on health and education services that should be used to report on 16.6.2.

Europe: European Social Survey

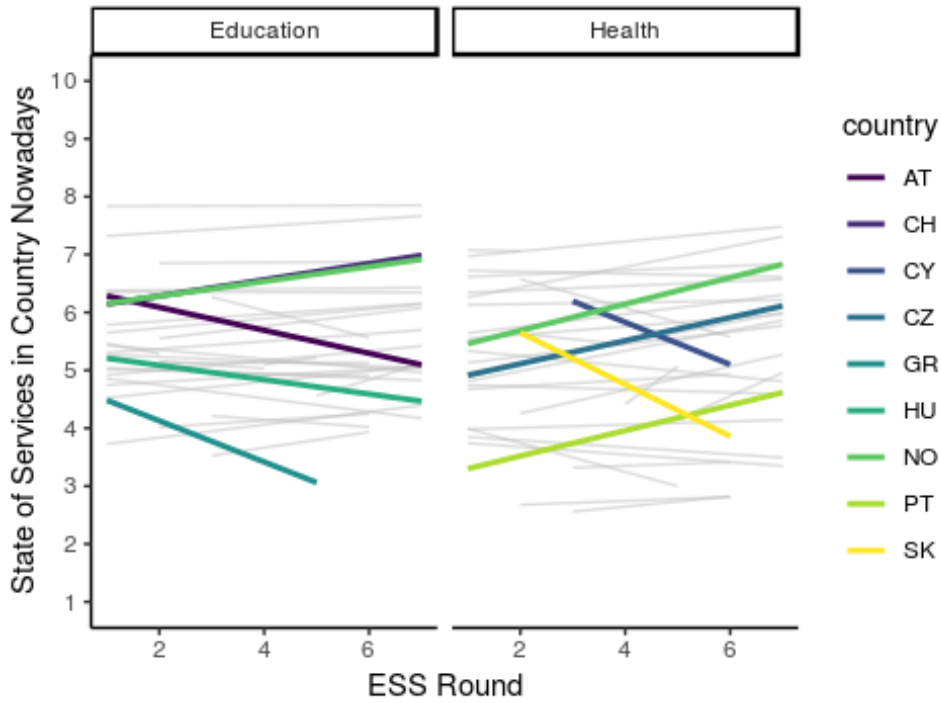
Using the first seven waves of the European Social Survey we can get a brief overview of perception of education and health services in Europe. The relevant survey questions are: *What do you think of the overall state of health services (education) in this country?* For the first 6 waves of the survey, from 2002 to 2012, perceptions of health services was weaker than education. In wave 7 however these two estimates are nearly identical. This is the result of a sudden increase in perceptions of health care which reached its highest point in wave 7. Interestingly, perceptions of education services are also highest in wave 7 however the increase from wave 6 is much more modest. The low point for both measures comes in the period 2006 to 2010.

Overall Satisfaction with Health Services, Europe



We can also disaggregate by country to examine those for which the development in satisfaction in absolute terms has been greatest. The top 5 countries by change in satisfaction over the time period are highlighted with coloured lines in the figure below. As can be seen, Austria, Hungary, and Greece have seen the largest reductions in satisfaction with Education, whereas Switzerland and Norway have seen positive gains. For Health Services, Cyprus and Slovakia have seen rather dramatic drops in satisfaction while Norway, Portugal, and Czech Republic have noted positive developments in satisfaction.

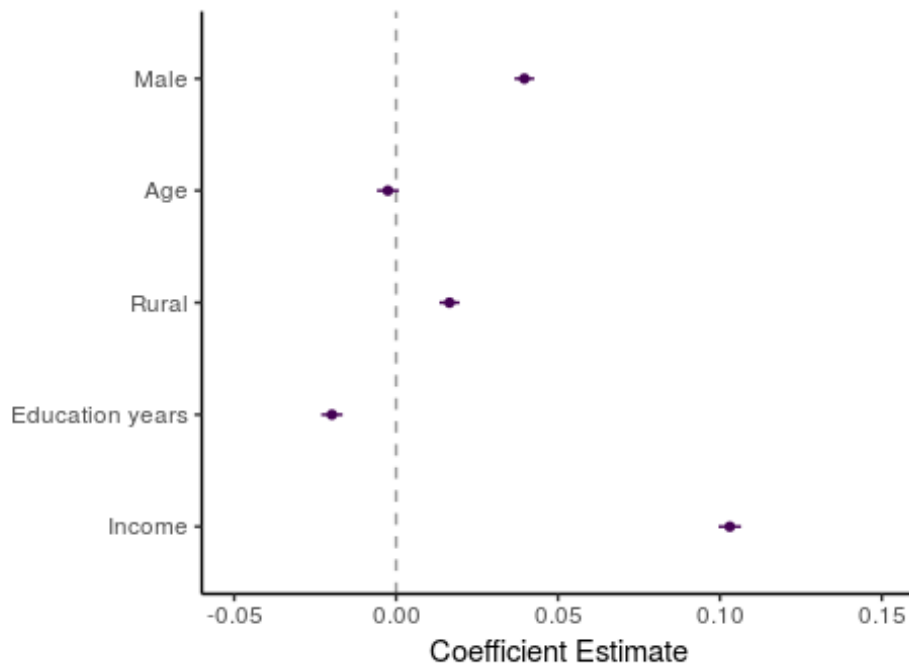
Overall Satisfaction with Services, Europe



Factors Related to Perceptions of Services

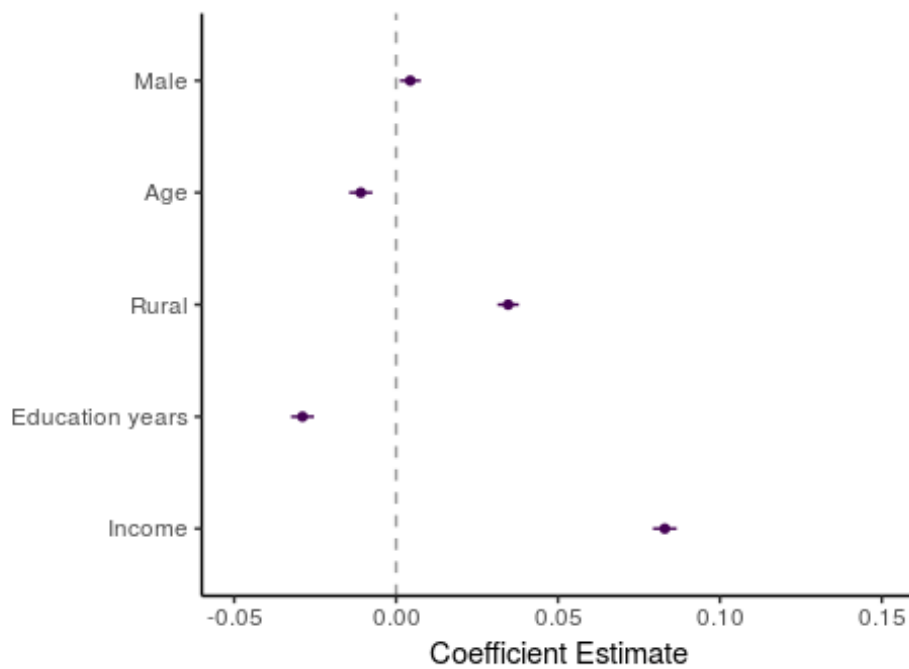
Unfortunately the ESS does not provide measures of institutional performance or accessibility to assess which factors relate to positive perceptions of government services. However we can examine demographic factors to see what correlates with positive perceptions of health and education services. The two figures below show the estimated correlations between the demographic variables gender, age, rural/urban residence and income, and the health and education service variables. In the top figure, Health Service, men are more satisfied than women, rural residents are more satisfied than urban, and those with higher incomes are more satisfied. Age is slightly negatively associated with satisfaction, but this is not statistically significant, whereas years of education is significantly negatively related. All variables have been standardized prior to regression which means that the magnitudes of the estimated coefficients can be compared. From this figure it is clear that income is by far the strongest determinant of satisfaction with health services among this group of predictors.

Associations with Perception of Health Servic (country and round FE)



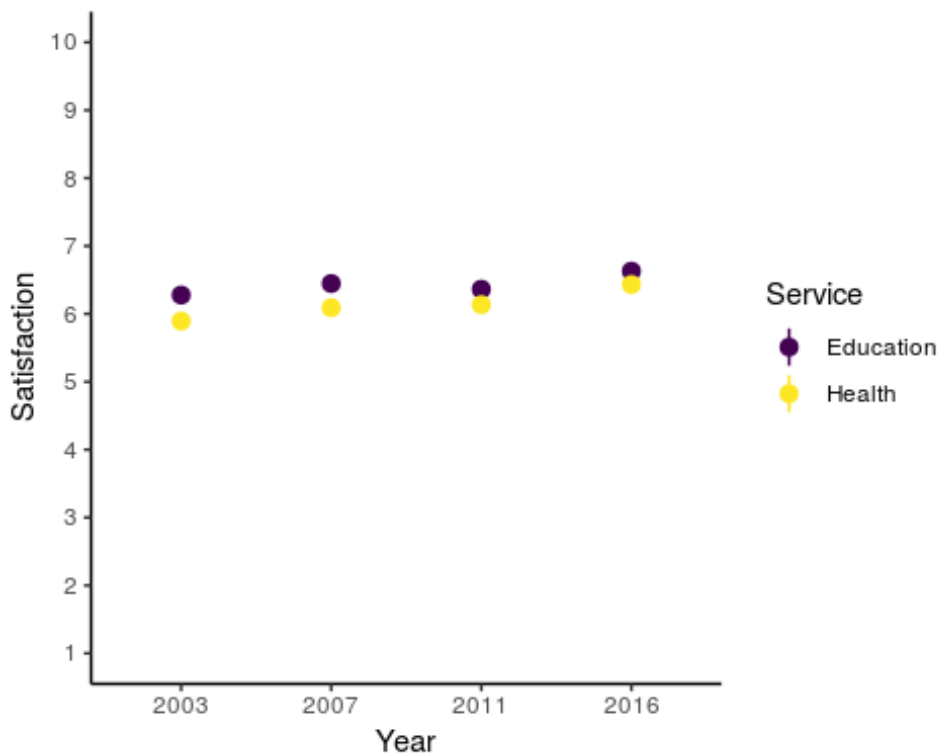
In the second figure we change dependent variables to assess the factors associated with satisfaction with education services. The pattern is largely the same, men, rural residents, and those with high incomes are more satisfied with education services, whereas age and years of education level are negatively associated with satisfaction. However here we see that the gap between women and men is far less than in the case of health services, and the gap between rural and urban residents far greater. Further, the negative estimate of education and age both now larger with the latter reaching statistical significance. Income remains the largest overall predictor, but its effect is slightly diminished in comparison to the health satisfaction results.

Associations with Perception of Education Se (country and round FE)

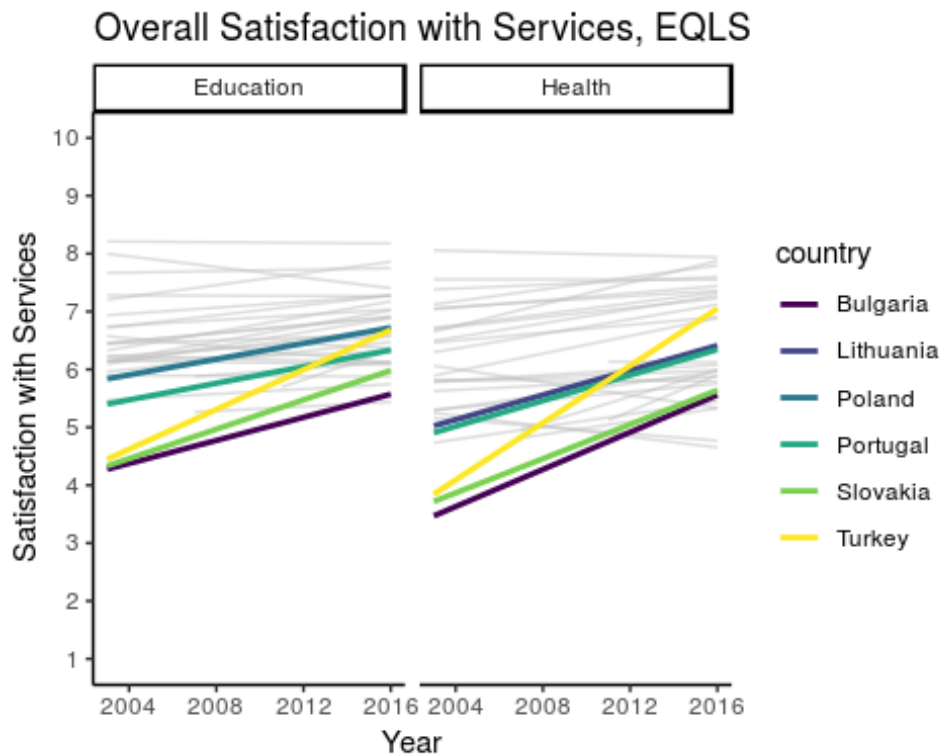


Europe: European Quality of Life Survey

The overall pattern of satisfaction with services in the EQLS data is similar to that found in the ESS data, which is reassuring in that both surveys cover approximately the same geographical area over the same time period. The EQLS has a slightly larger number of countries but nevertheless, the same pattern appears in which a slight drop in satisfaction around the middle period is followed by an upturn in satisfaction in the most recent wave of data.



With respect to individual countries we do however see a different picture. In fewer countries was it found to be the case that the difference between satisfaction for health and education was lower in 2016 than in 2004; the largest movers in this regard were all positive. Part of this divergent pattern may be due to more consistent data collection in the EQLS; nearly all countries were present in each wave of the survey. Only Portugal and Slovakia were identified in both datasets as showing large changes over the examined period. Satisfaction with health and education are increasing in Portugal in the EQLS and ESS, but in Slovakia we see a difference: health and education satisfaction are increasing in the EQLS, but satisfaction with health is strongly decreasing in the ESS.



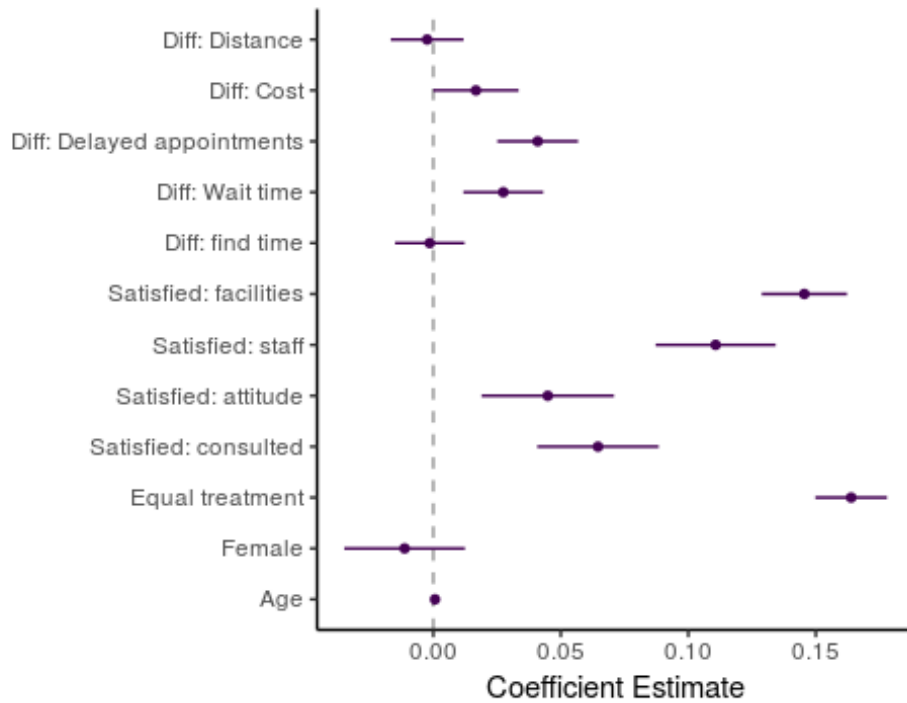
Factors Related to Satisfaction with Services

All variables are all coded such that higher values indicate greater satisfaction with services, or less difficulty in obtaining services. As such, negative correlations are not to be expected among our service predictors and overall satisfaction. In the first figure we examine the predictors of satisfaction with health services. Here we see very large effects in the group of *satisfaction* variables and of the *equal treatment* predictor. *Equal treatment*, *satisfaction with facilities*, and *satisfaction with staff* are the main predictors. *Satisfaction with the attitude of staff*, and the extent to which one was *consulted* regarding treatment are also positively associated with overall satisfaction.

The group of *difficulty* variables are on the other hand somewhat mixed in their relationship with overall satisfaction. Experiencing less difficulty with regard to *cost*, *delayed appointments*, and *wait times* are associated with greater satisfaction, but difficulty with respect to *distance to the doctor* and *finding time to leave work* for treatment have no association with overall satisfaction.

Lastly, among our demographic variables *Female* and *Age* we find no association.

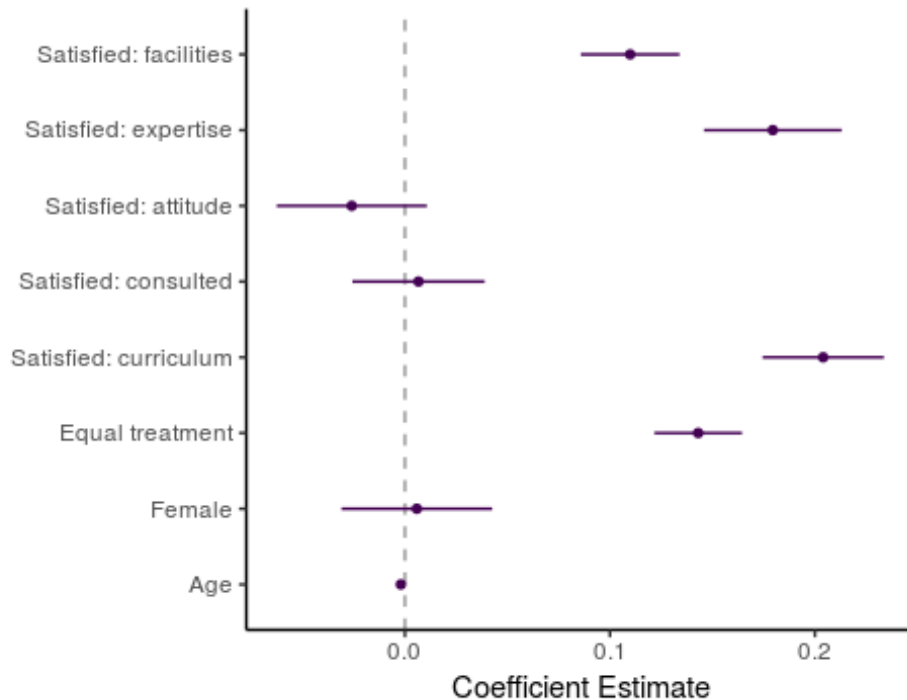
Predictors of Satisfaction with Health



Difficulty measures are not included for education services, but here we can examine the associations with a battery of *satisfaction* measures and *equal treatment*. Similar to the health measures, we find in general that satisfaction with particular aspects of education service are related to overall satisfaction. The most important predictors are *satisfaction with facilities*, the *expertise of staff*, and the *curriculum*. *Equal treatment* is similarly an important predictor of overall satisfaction. However, in contrast to the health measures, the data do not show any relationship between *satisfaction with the attitude of staff*, nor with the extent to which one was *consulted*, and overall satisfaction with education services.

Again here we find no association between our demographic variables *Female* and *Age* and overall satisfaction with education services.

Predictors of Satisfaction with Education



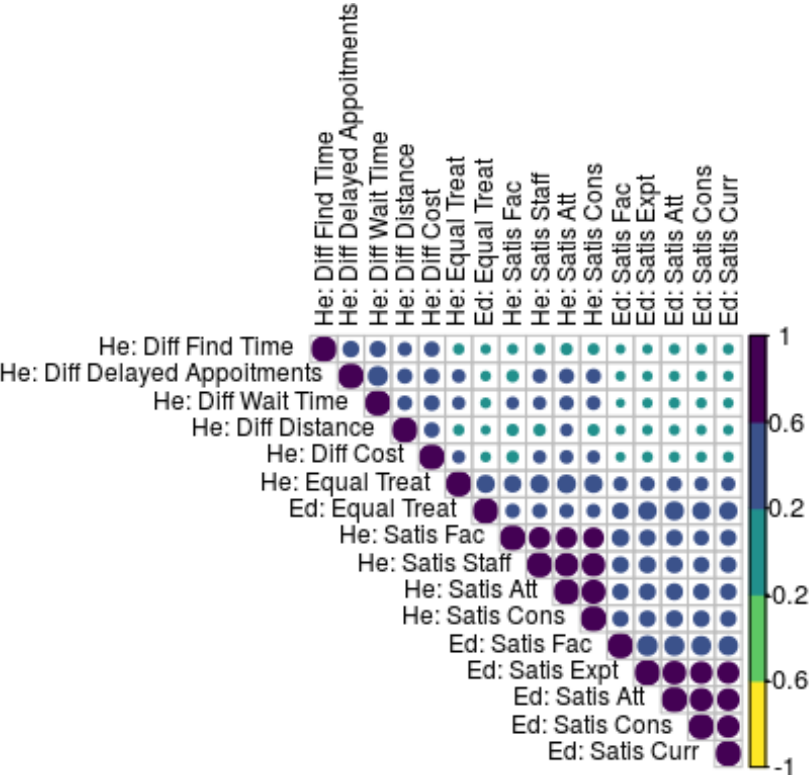
Relationships between predictors

We can study a bivariate correlation matrix plot in order to examine the relationships between predictor variables. The figure is interpreted such that the size of the circles represent the strength between two predictors, and the colour of the circles represent the direction of the association. The larger and darker the circles, the stronger a positive correlation. Correlations range from -1 (represented as yellow), strongly negative, to 1, strongly positive (represented as purple). For example, the green circle at the top-right of the figure represents the correlation between *He: Hard Find Time* along the vertical axis, and *Ed: Satis Curr* along the horizontal axis. The small green circle indicates that the association is between 0.2 and -0.2 according to the legend, thereby representing a non-association between these two predictors. Each circle in the plot is interpreted in the same manner, as representative of the bivariate correlation between the variable pairing along the vertical and horizontal axes. The diagonal elements of the figure are therefore to be ignored; these circles represent the correlation between a single predictor and itself, which is naturally 1 in all instances. The variables are further ordered according to a hierarchical clustering algorithm which allows us to see clusters of variables that similarly relate to one another.

As can be seen in the figure, there are two strong clusters of variables represented by the groupings of dark circles: The *Health Satisfaction* variables all strongly and positively correlate with one another, as do the *Education Satisfaction* variables. We further see a weak cluster at the top left of the figure in the cluster of *Difficulty* variables with regard to health services. Further, on the right-hand side of the figure, in the middle of the vertical axis we find a second cluster of positively associated variables. The *Health Equal Treat* to *Education Satisfied Facilities* form a cluster of moderate correlations. This indicates that these variables tend to move together in a positive direction, but at a much weaker rate than the other two clusters. Lastly, in the upper-right corner of the figure we see a cluster of variables that are largely unrelated to one another. Specifically, the *Health Difficulty* variables have effectively zero association with the *Education Satisfaction* variables. These two variable groups should therefore be seen as independent of one another.

A final note on the figure, it is of interest that there are no negative bivariate relationships present in the data. That is, for no two-variable combination is it the case that high evaluations of one are associated with low

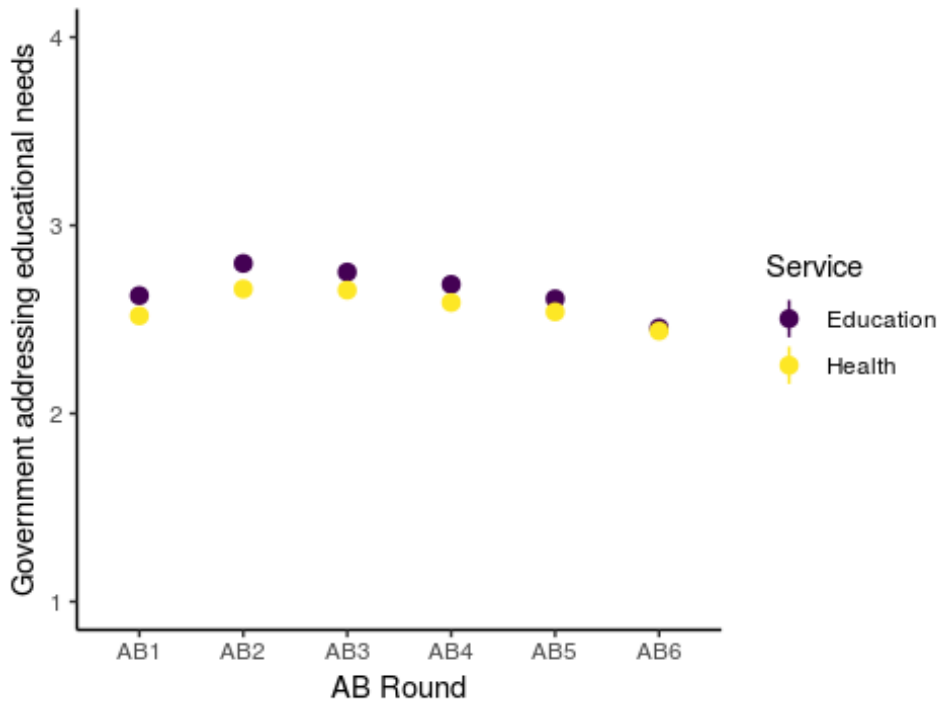
evaluations of the other. This indicates that governments may have a tendency to focus on these two institutions in conjunction such that increased resources for one does not imply reduced resources for the other. Another interpretation is that individual survey respondents view these institutions as highly related in their evaluation which may result in perceptions of one influencing perceptions of the other such that evaluations fluctuate consistently in the same direction.



Africa: Afrobarometer

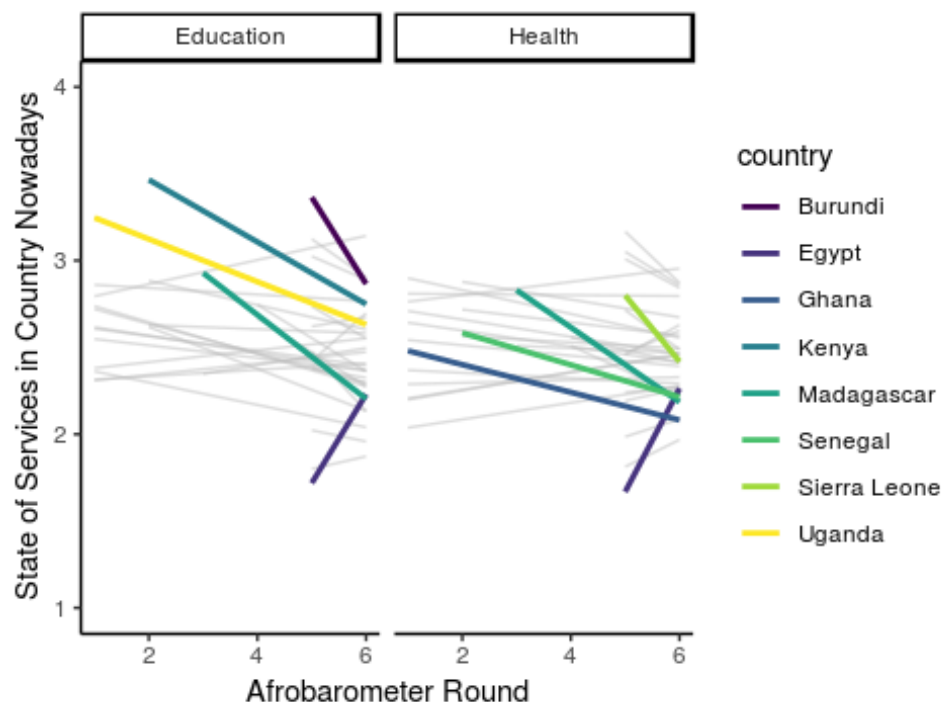
Using data from the Afrobarometer’s six rounds we can plot the average level of satisfaction with Health and Education services across Africa. The items best suited for measuring citizens’ satisfaction are: *How well or badly would you say the current government is handling the following matters, or haven’t you heard enough to say: Addressing educational needs?*, with the following answer categories: 1=Very badly, 2=Fairly badly, 3=Fairly well, 4=Very well. Given that the number of countries surveyed has increased form 12 in round 1 to 36 in round 6, we cannot say anything about the changes in average satisfaction overtime, other than that the measure is not fluctuating much on average.

Overall Satisfaction with Services, Africa



If we disaggregate by country to examine those for which the changes in satisfaction in absolute terms has been greatest. The top 5 countries by change in satisfaction over the time period are highlighted in color, and the remaining 31 countries are represented by thin grey lines. With the exception of Egypt where satisfaction with both health and education services increased between round 5 and round 6, the largest changes over the time period have all been negative. Madagascar, Ghana, Sierra Leone and Senegal have all seen sharp declines with regards to satisfaction with health services. Madagascar is also among the top movers when it comes to satisfaction with education services and has seen a large decline, together with Kenya, Uganda and Burundi.

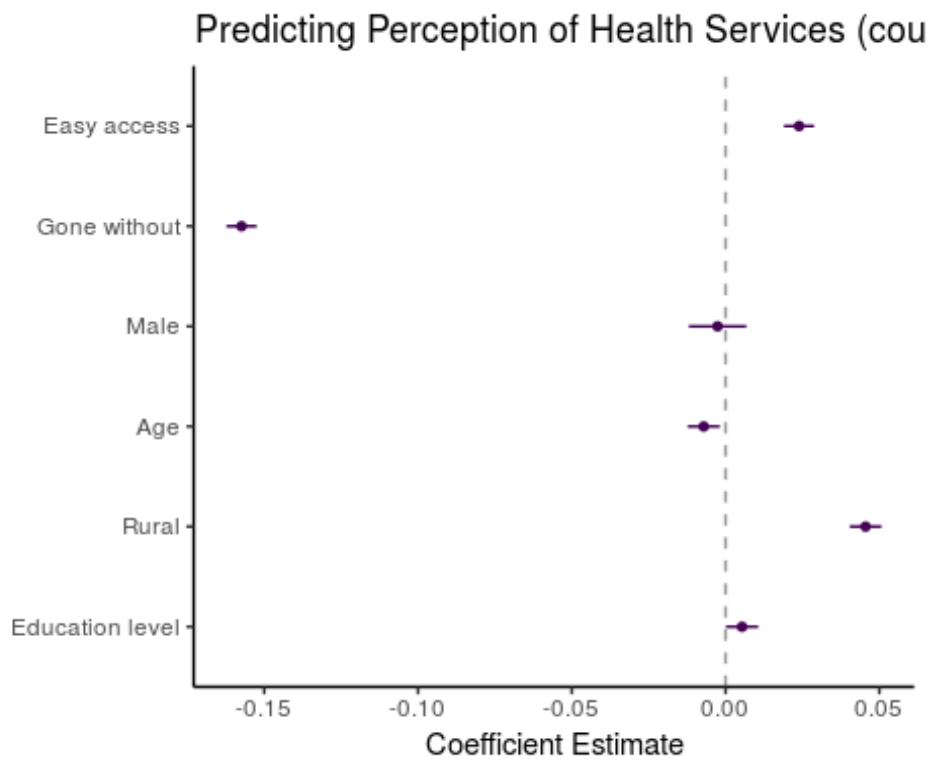
Overall Satisfaction with Services, Africa



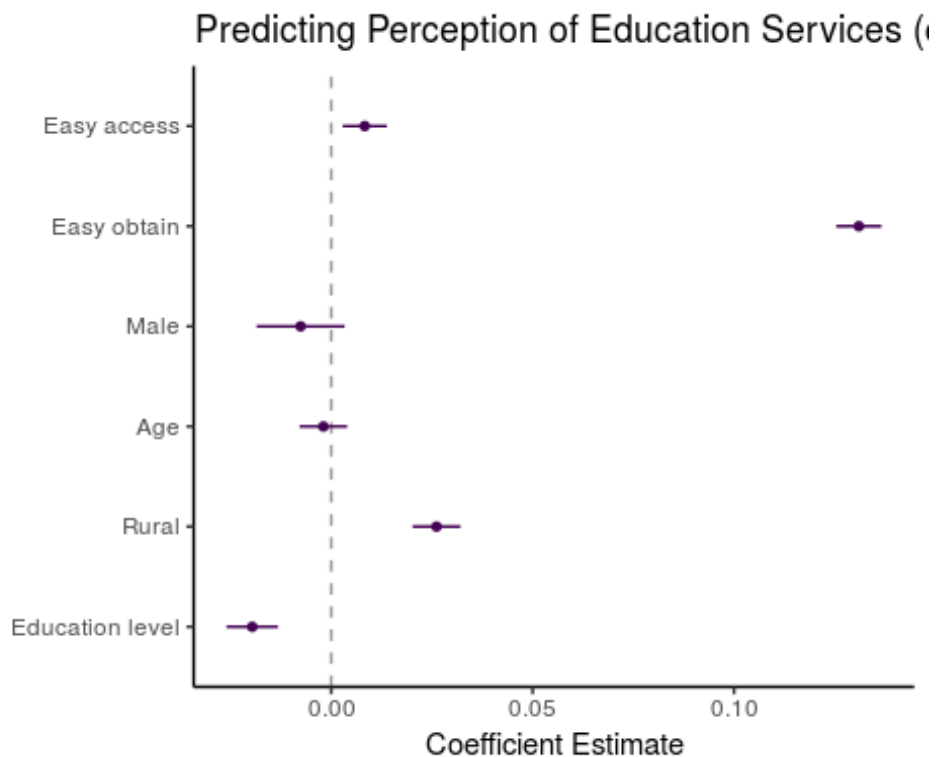
Factors Related to Perceptions of Services

In contrast to the ESS, the Afrobarometer surveys do include several measures of institutional performance and accessibility that we can use to assess which factors relate to positive perceptions of government services. Some are available for most rounds, such as if there is a School or a Health Clinic within easy walking distance (*Easy access*); How easy or difficult was it to obtain the medical care or services from teachers or school officials? (*Easy obtain*); and how often respondents or their family have gone without medicines or medical treatment over the past year (*Gone without*). These are presented first together with demographic predictors. After which we will look at a battery of service related questions that was only fielded in round five. This battery is of particular interest as it, in addition to the aforementioned questions, also asks about: if the service was *Too expensive*, if service providers were *Disrespectful*, *Wait times*, *Overcrowded classrooms*, if facilities were *poor/dirty*, if doctors/teachers were *Absent*, and if there was a *Lack of supplies/textbooks*.

The two figures below show the estimated correlations between the measures of institutional performance, the demographic variables, and the health and education service variables. In the first figure, Health Service, walking distance to a clinic is associated with higher satisfaction although the effect is small, having gone without access to treatment or medicines in the past year is substantively negatively related to satisfaction, and is by far the strongest determinant among this group of predictors. For the demographic variables, there is little-to-no difference with regards to gender, age and educational level when it comes to satisfaction, while rural respondents are considerably more satisfied with services in general. Possibly this is due to differences in expectation between rural and urban residents, but without data on that this is just a speculation. Like with the ESS data, all variables have been standardized prior to regression which means that the magnitudes of the estimated coefficients can be compared.



In the second figure we change dependent variables to assess the factors associated with satisfaction with education services. The pattern is largely the same, walking distance to a clinic is associated with higher satisfaction, rural residents are more satisfied with education services. The strongest predictor is the perception of it having been easy to obtain a primary school placement, which is positively related to satisfaction. In contrast to satisfaction with Health services, education level is a significant and substantial predictor of satisfaction with Educational services: those who are more educated are significantly less satisfied with the government is addressing the educational needs.

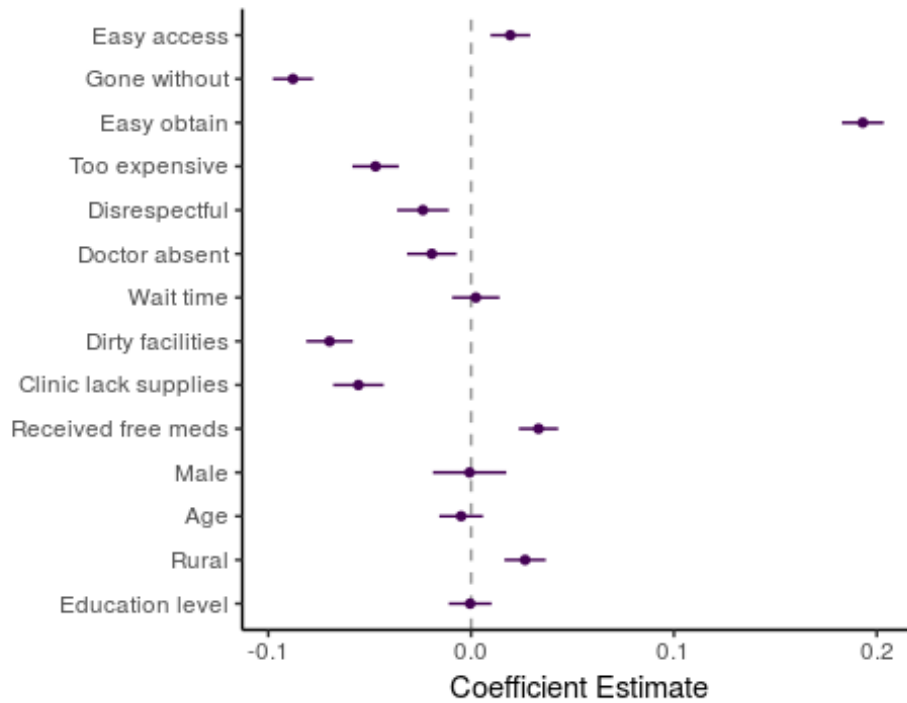


Afrobarometer round 5 - service battery

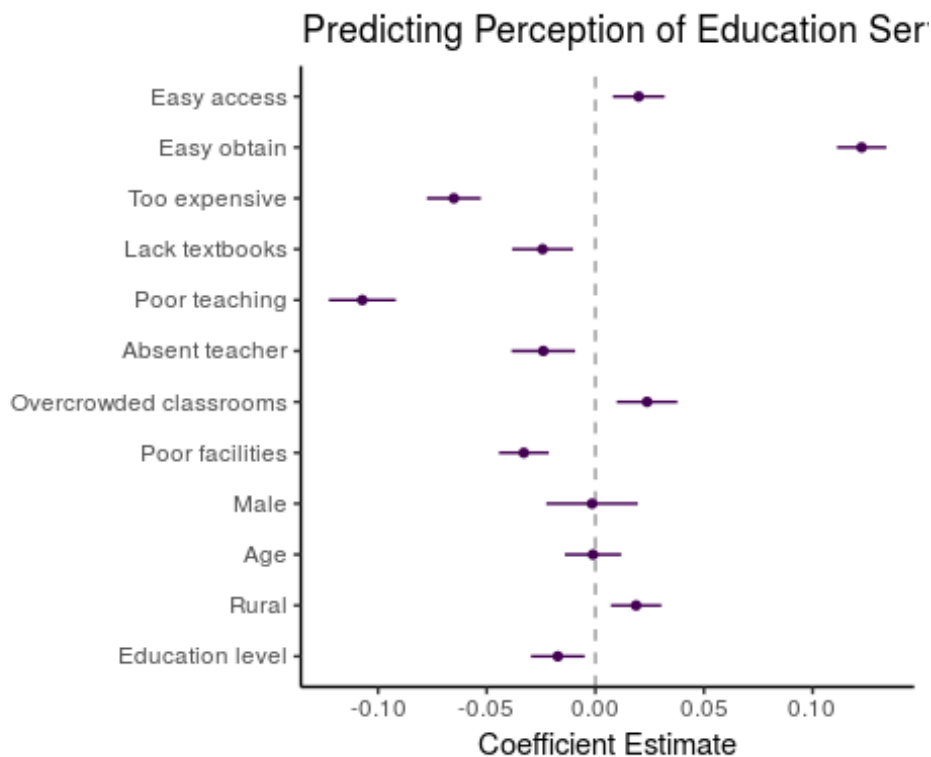
The fifth round of the Afrobarometer allows us to do a more fine grained analysis of the predictors of satisfaction with Health and Educational services. The two figures below show the estimated correlations between the several measures of perception of institutional performance, demographic variables, and satisfaction with services.

In the first figure, Health services, the patterns in almost identical for the variables that are available in the full six rounds of the Afrobarometer. Having gone without treatment or medication is a strong negative predictor while, walking distance, and rural residency are positively related to satisfaction. With regards to the additional institutional variables all exhibit the expected relationship. Finding it easy to obtain medical treatment is by clearly the strongest predictor of satisfaction. Those who find health services to be too expensive, personnel to be disrespectful, are less satisfied. As are those who experience that doctors are absent. Wait times does not seem to be a concern and is distinctly unrelated to satisfaction. Dirty facilities and lack of medical supplies are also significantly negatively related to satisfaction with fairly large effect sizes. Having received free medication is positively related to satisfaction.

Predicting Perception of Health Services (c)



Looking at satisfaction with Educational services, the second figure, we see similar patterns and effect sizes as in the larger sample when controlling for additional perceptions of performance: the perception of it having been easy to obtain a primary school placement remains the strongest predictor, and walking distance and rural residency are positively related to satisfaction, while education level is negatively associated with satisfaction. Of the additional institutional variables all but one show the expected relationship. Those who find educational services to be too expensive and who see the teaching quality as poor are substantively less satisfied. Lack of textbooks, teacher absenteeism and poor facilities are also significantly negatively related to satisfaction although the effect is smaller. Surprisingly overcrowded classrooms are positively related to satisfaction, although the effect is small. We suspect that this may be a coding error in the dataset.



Conclusion and recommendations for the 16.6.2 questionnaire

There are a number of factors that predict satisfaction with health and educational services as shown in this brief analysis, but in the interest of economizing on the questionnaire we conclude with the most relevant factors whose inclusion are warranted in the service satisfaction battery. With regard to the selected attributes some recommendations are applicable to both services.

First, with regard to **ACCESS** to healthcare, there is an argument to be made for replacing the current focus on *Geographical distance* with a more generic question on *Finding it easy to obtain medical treatment* (the strongest predictor of satisfaction in the African context), as the geographical distance to clinic is not a relevant predictor in the European context. However, in the European context, *delayed appointments* and *wait times* are associated with greater satisfaction, and a revised formulation on *Finding it easy to obtain medical treatment* could include such considerations, when asked to European respondents.

While no measure of **ACCESS** to education is included in the European context, in the African context, *Ease to obtain a primary school placement* remains the strongest predictor, and *Walking distance* and rural residency are positively related to satisfaction. We suggest retaining this attribute which is in all likelihood relevant in a global context.

Second, the **COST** of both types of service is relevant in predicting satisfaction and should be included in the battery for both education and health. While the magnitude is small (and only measured for health services) in Europe where most enjoy inclusive and universal healthcare systems, the cost of services is a strong predictor in the African context, and is in all likelihood relevant in a global context.

Third, the state of **FACILITIES** is relevant for both types of services and in both contexts. Note that the education questions *FACILITIES/SAFETY: The school and its compound are a safe place for students* could be revised into a general question regarding the *State of facilities*, presumably capturing both the perception of safety and their

general state. It should however be noted that no measures of *safety* were in either data set, whereby its effect has not been tested.

Fourth, **EQUAL TREATMENT** is relevant to satisfaction. In the European context, *equal treatment* was the strongest predictor for satisfaction with health services and the third strongest predictor for satisfaction with educational services. This measure taps into the perceived impartiality of service providers. In the African context the question *Disrespectful service providers* is a relevant albeit less strong predictor. However, this question does not tap into the perceived equality of treatment, as it may very well be that respondents perceive providers to be disrespectful across the board. We would recommend the inclusion of the former in the 16.6.2 questionnaire.

Fifth, the inclusion of **DOCTOR ATTITUDE** into the health battery is warranted given that in the European context *Satisfaction with the staff* and the *Attitude of staff* are relevant predictors of overall satisfaction. Moreover, in the African context *Disrespectful personnel* are negatively related to overall satisfaction.

Finally, with regard to **QUALITY OF SERVICE**, it should be noted that the analysis does not include measures of *outcomes* due to data limitations and we thus cannot say how such measures compare to the measures included in both surveys reviewed for this analysis. However, it is evident that *input* measures, such as respondents' perception of *school curricula*, *expertise of staff* and the *quality of teaching* are strong predictors in both the European and African context, justifying their inclusion in the 16.6.2 questionnaire on *Quality of Service*.

Current version of draft 16.6.2 questionnaire: Suggested revisions in red

	HEALTH
4.1	ACCESS: The doctor's office, clinic or a hospital could be reached by public or private transportation in less than an hour without difficulties. → <i>It was easy to obtain medical treatment. (AB formulation)</i>
4.2	COST: Expenses for healthcare services were affordable to you/your household.
4.3	FACILITIES: The healthcare facilities were clean and in good condition.
4.4	EQUAL TREATMENT: You [or a child in your household] were treated with respect. → <i>All people are treated equally in receiving health services in your area. (EQLS formulation)</i>
4.5	DOCTOR ATTITUDE: The doctor spent enough time with you [or a child in your household] during the consultation.
	EDUCATION
9.1	ACCESS: The school can be reached by public or private transportation in less than an hour without difficulties.
9.2	COST: School-related expenses (including administrative fees, books, uniforms and transportation) are affordable to you/your household.
9.3	FACILITIES/SAFETY: The school and its compound are a safe place for students. → <i>School facilities are in good condition.</i>
9.4	EQUAL TREATMENT: Children are treated with respect by teachers and other school staff. → <i>All children are treated equally in the school in your area. (EQLS formulation)</i>

9.5	QUALITY OF SERVICE (OUTCOMES): In math and reading, children are performing at (or above) the level expected for their grade. → <i>The quality of teaching is good (AB formulation)</i>
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