

**NISTIR 8280**

**Ongoing Face Recognition  
Vendor Test (FRVT)  
Part 3: Demographic Effects**

**Annex 11 : Cross age and country with application photos**

This document is an annex of NIST Interagency Report 8280:  
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**NIST**  
**National Institute of  
Standards and Technology**  
U.S. Department of Commerce

## 1 Overview

This annex includes figures that shows false match rates across different age groups. Each page contains one figure corresponding to one algorithm. Each figure shows a set of heatmaps, each showing a matrix of values. The value in column  $j$  is the FMR obtained when images of persons in age group  $j$  are compared with images of other subjects in age group  $i$ .

## 2 Data

The images are the high quality portraits described in Annex 2. As such, potential quality related drivers of high false match rates (such as blur) can be expected to be absent.

The total number of images is 883 356. The total number of persons is 696 288. The total number of comparisons is just over 195 billion (195 158 902 823) produced by full cross-comparison of two subject-disjoint and image-disjoint sets containing 442 019 and 441 517 respectively.

## 3 Fixed Threshold

A false match is declared if the comparison score is equal to, or exceeds, a threshold. This same value applies to all comparisons in all cells. The threshold value could be any value germane to that comparison algorithm. The threshold value was taken from a different experiment in which mugshot impostor pairs were compared. It is the value that gave a FMR of 0.00003 over that set.

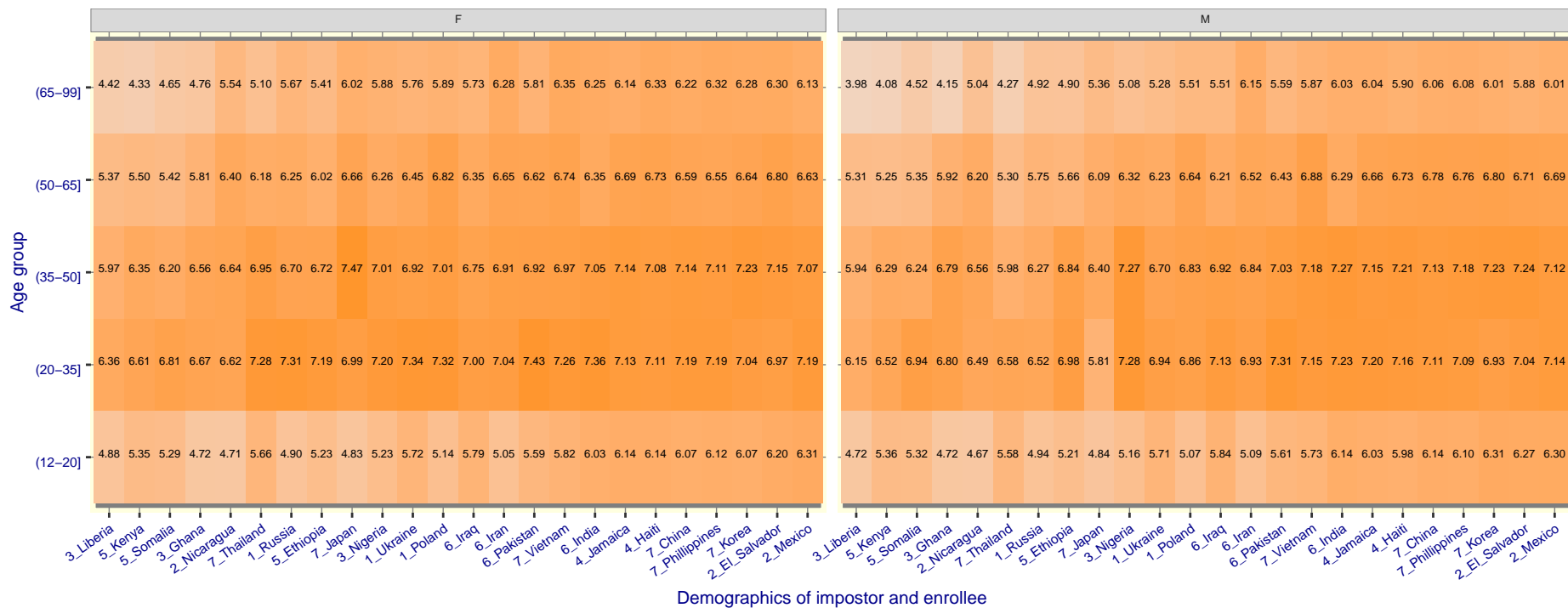
## 4 Plot

The plot shows cross-age false match rate as follows.

- ▷ 0 - The six columns shows for six countries selected to span global regions and because the dataset contains many images from those countries.
- ▷ 1 - In the top row, the various heatmaps correspond to comparison of women with women from the specific country.
- ▷ 2 - The bottom row likewise shows men with men false match rates.
- ▷ 3 - Any given cell restricts impostors to have the same sex and country of origin, and individuals from age group  $i$  and  $j$  drawn from the following list: (12 – 20], (20 – 35], (35 – 50], (50 – 65], and (65 – 99].
- ▷ 4 - The countries are sorted left-to-right in increasing order of maximum FMR measured in the two panels (male-male, and female-female).
- ▷ 5 - The name of the algorithm is included in the legend.
- ▷ 6 - The threshold value and the nominal FMR value that it corresponds to, are likewise, recorded in the legend. The FMR is nominal in the sense that it was computed over impostor comparisons made in a separate, domestic, dataset (Annex 1).

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fm\_age\_x\_country/counts.pdf

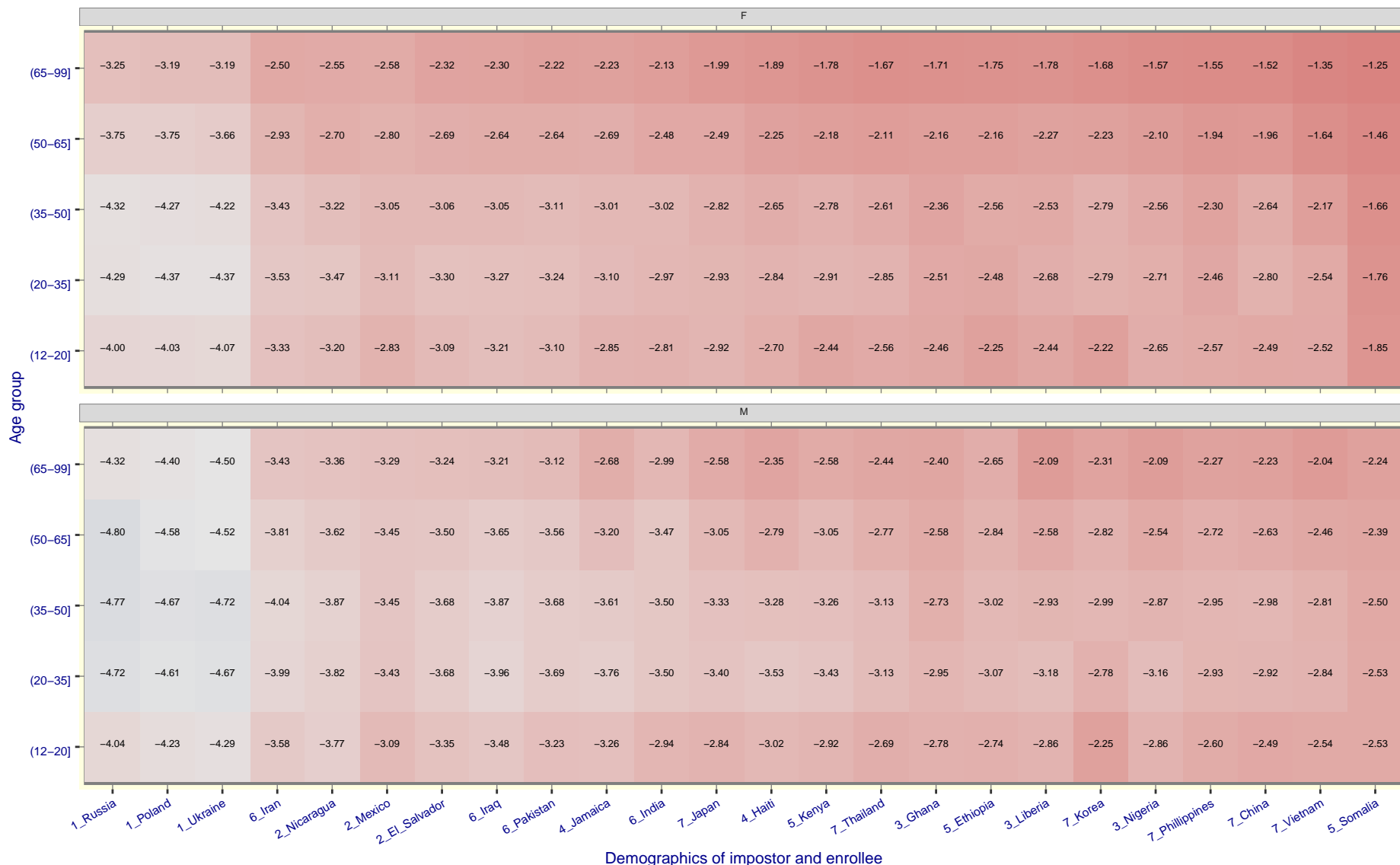
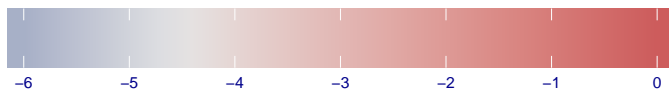
Dataset: ISO log10 Num Comparisons  
 Impostors have same sex, age and country of birth



Demographics of impostor and enrollee

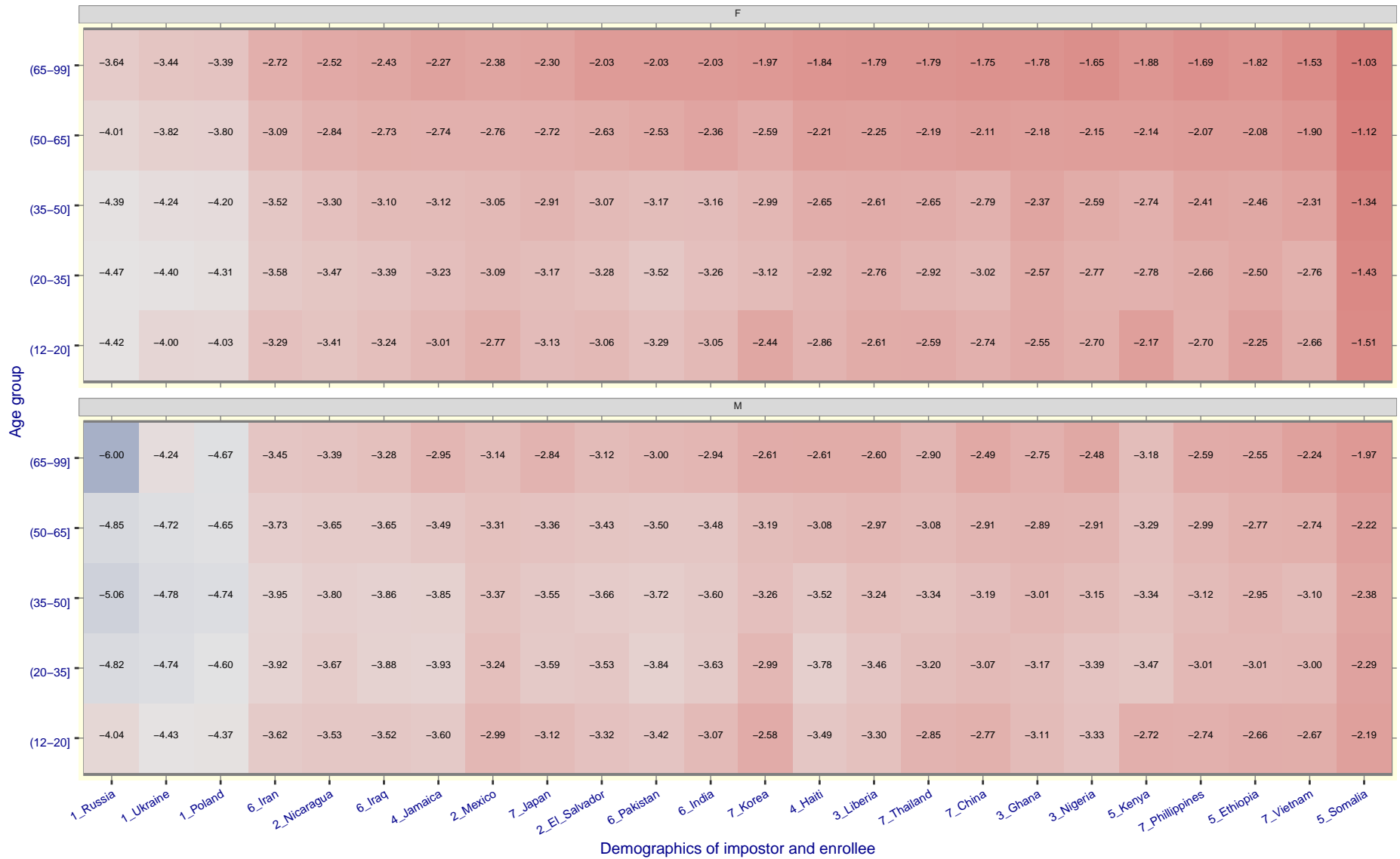
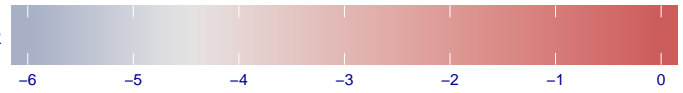
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/3divi\_003.pdf

Algorithm: 3divi\_003 Threshold: 2.767660 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



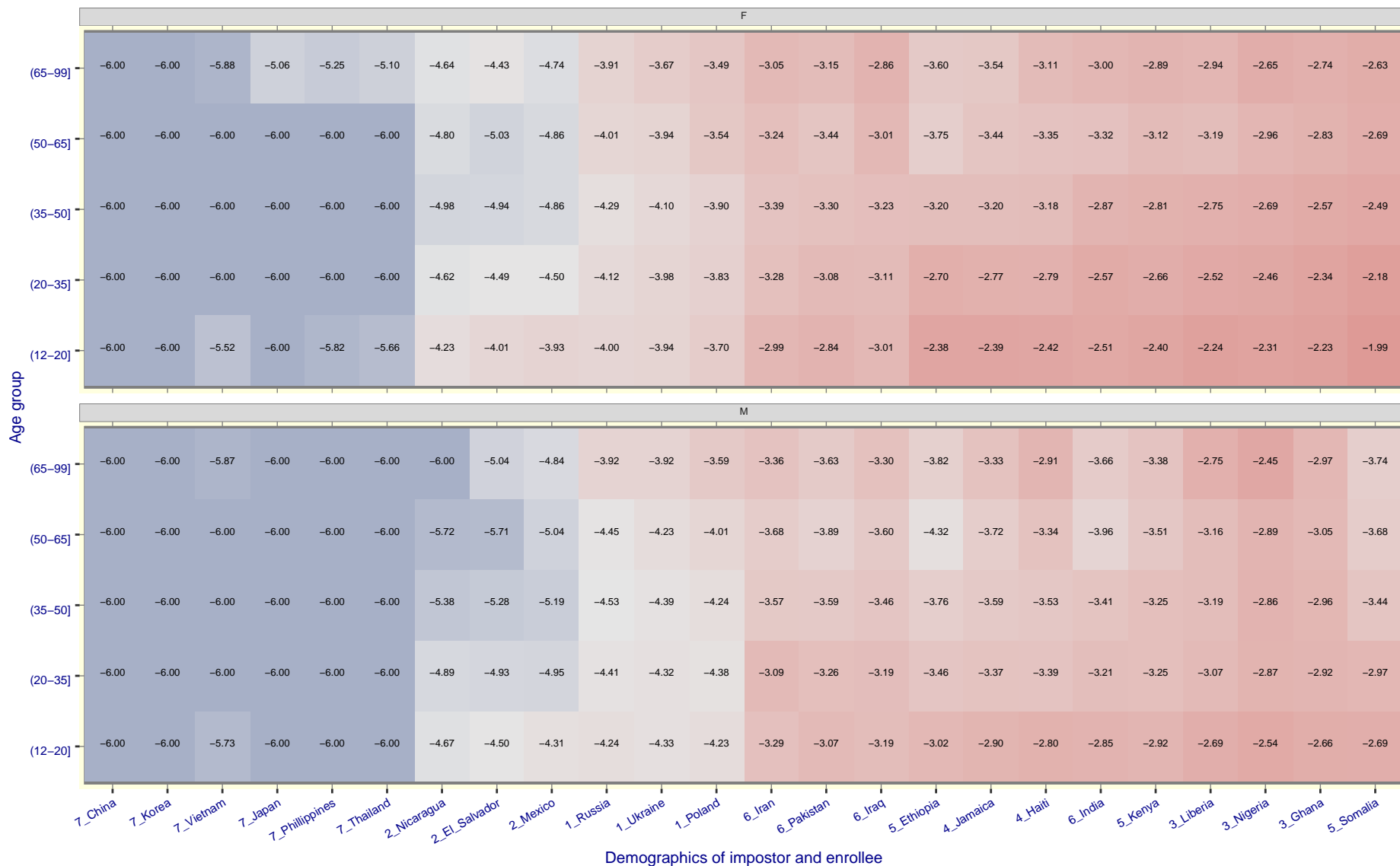
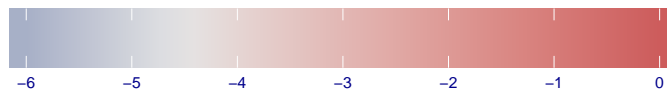
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/3divi\_004.pdf

Algorithm: 3divi\_004 Threshold: 2.917220 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/adera\_001.pdf

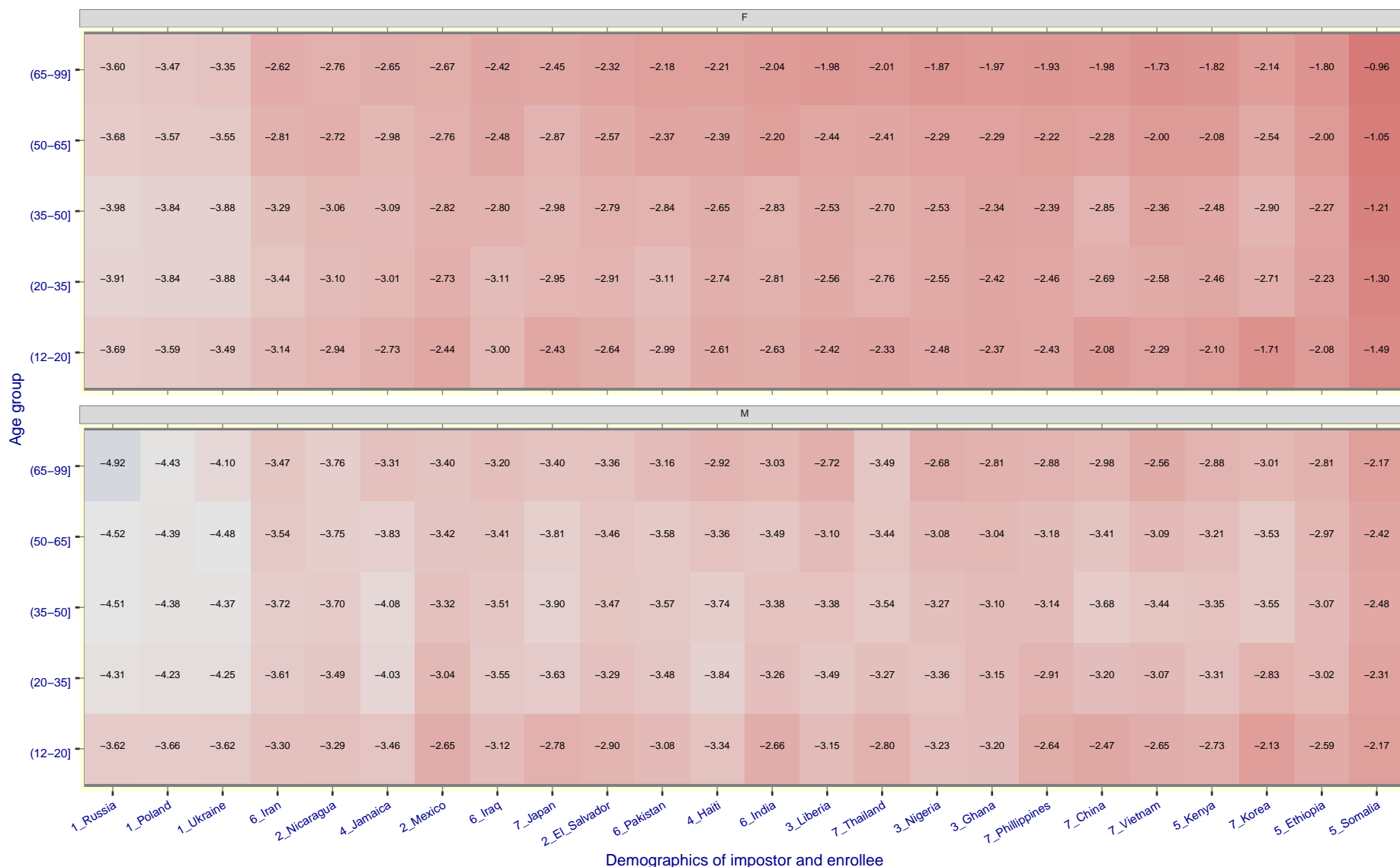
Algorithm: adera\_001 Threshold: 0.751037 Dataset: Application Nominal FMR: 0.000030 log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/alchera\_000.pdf

Algorithm: alchera\_000 Threshold: 0.707571 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

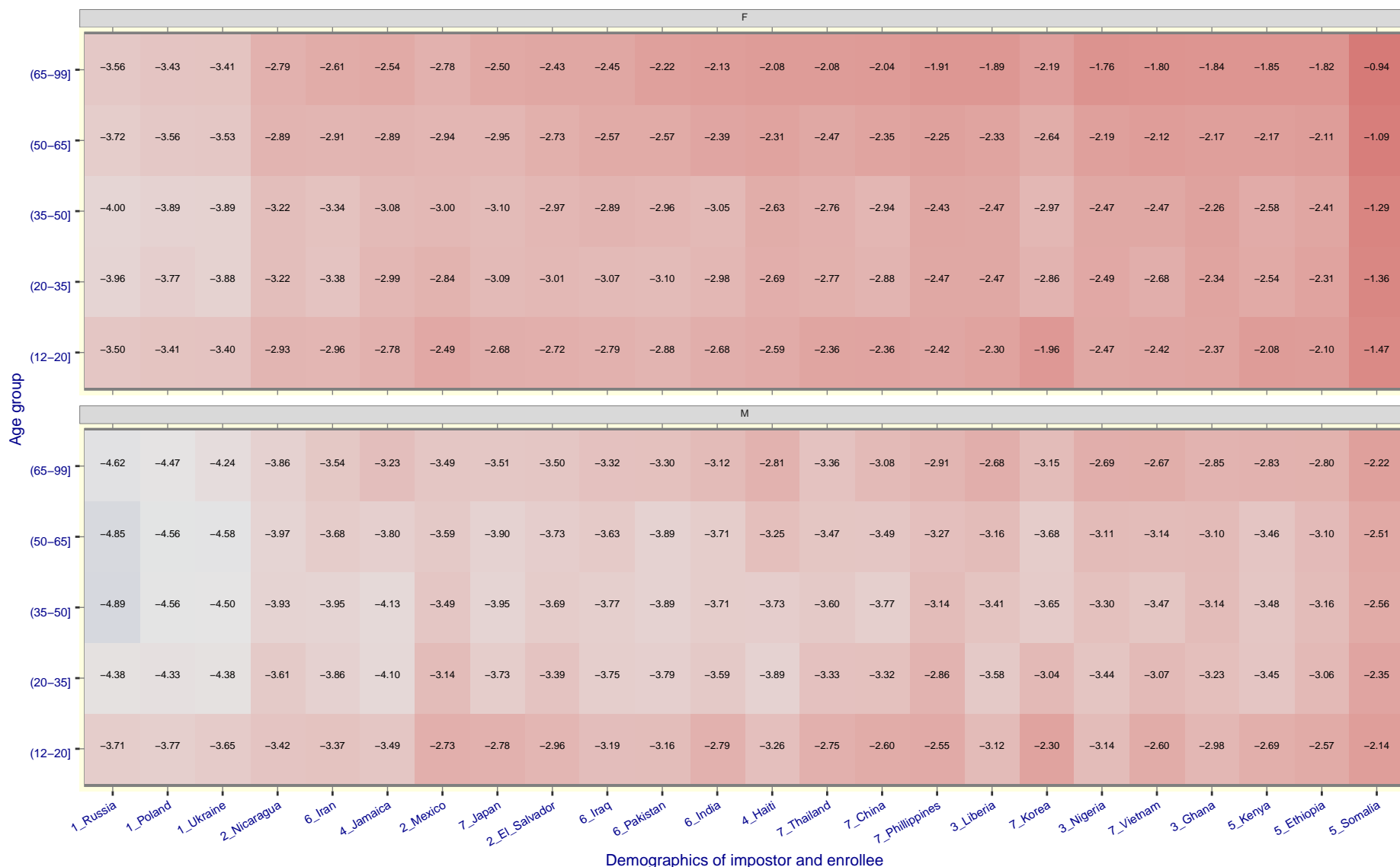
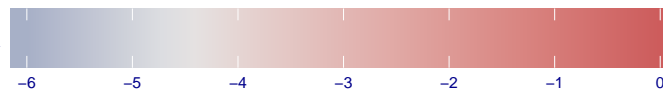
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/alchera\_001.pdf

Algorithm: alchera\_001 Threshold: 0.719720 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

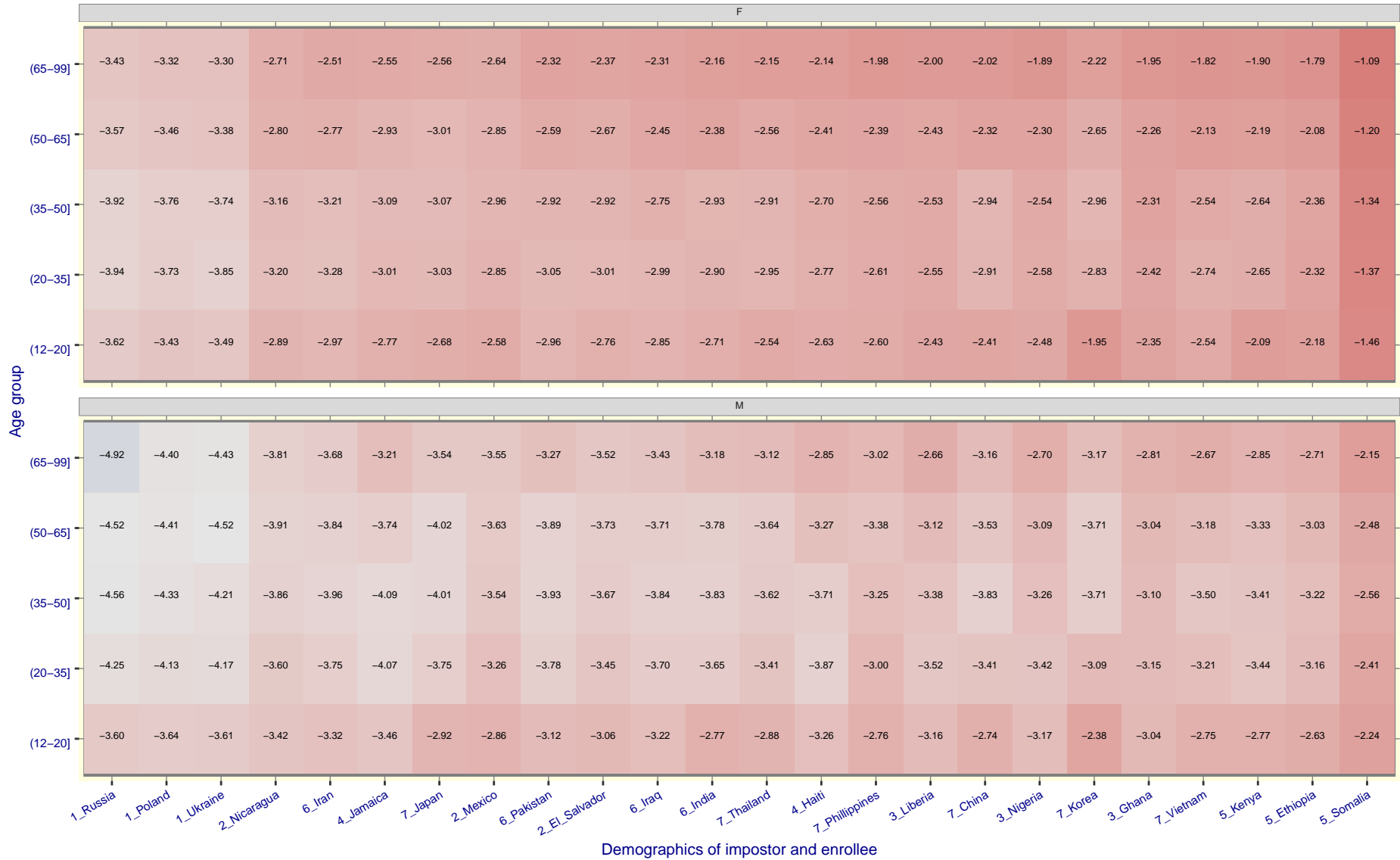
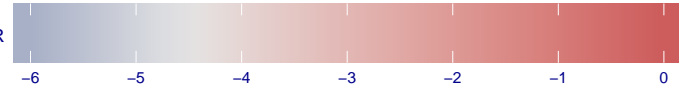




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/allgovision\_000.pdf

Algorithm: allgovision\_000 Threshold: 0.441615 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

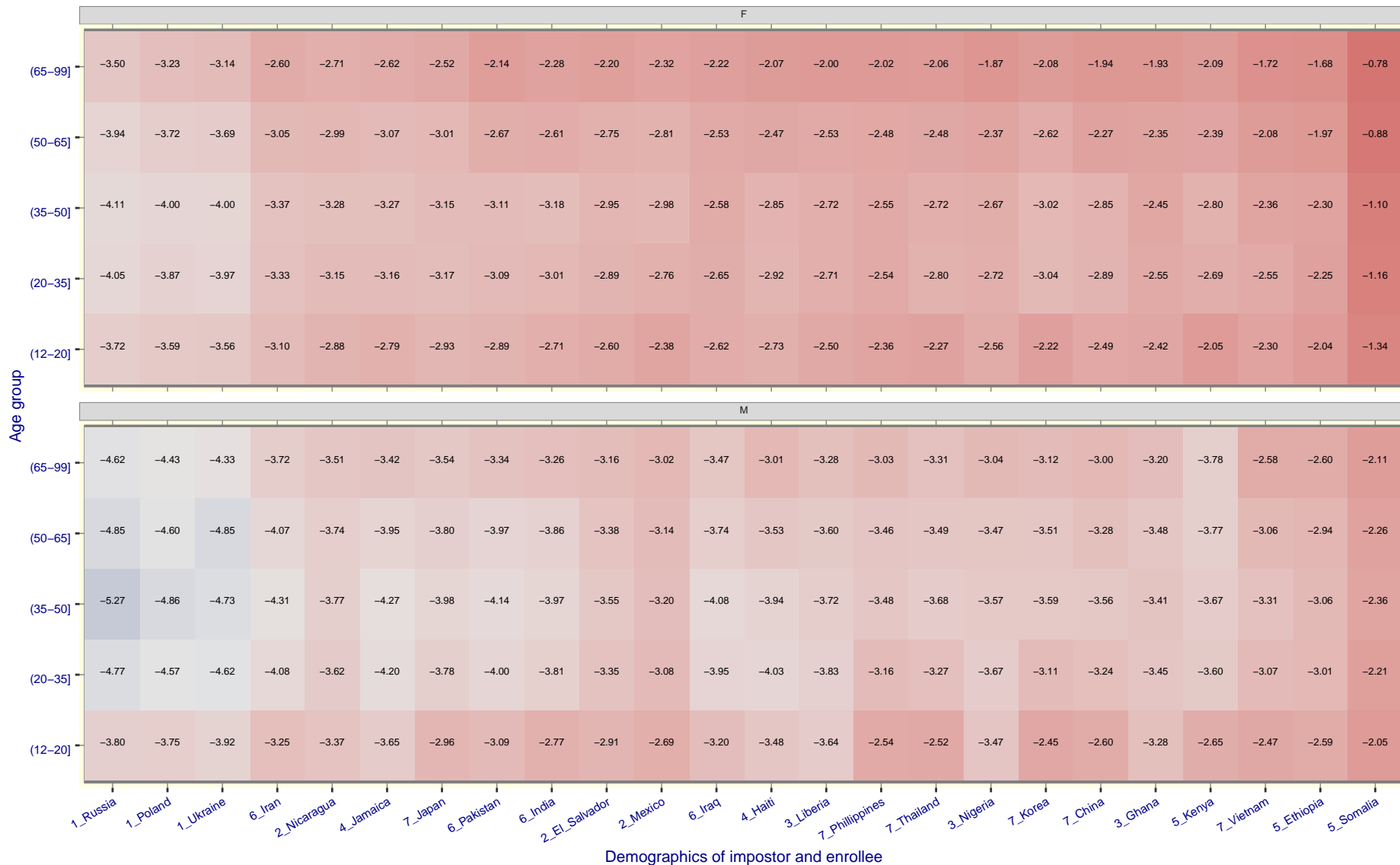


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/alphaface\_001.pdf

Algorithm: alphaface\_001 Threshold: 0.428284 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

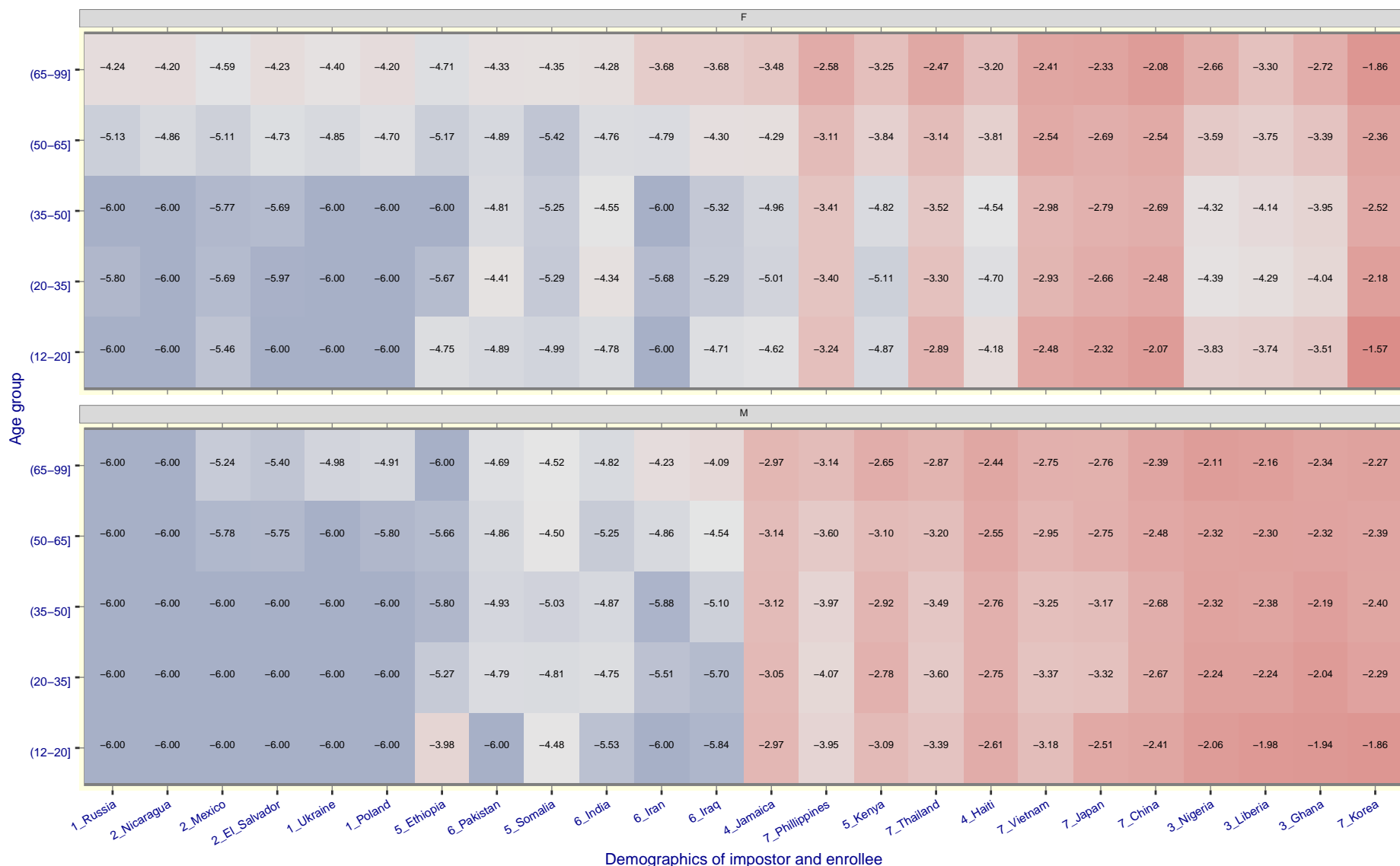
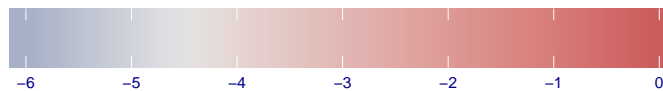
log10 FMR



Demographics of impostor and enrollee

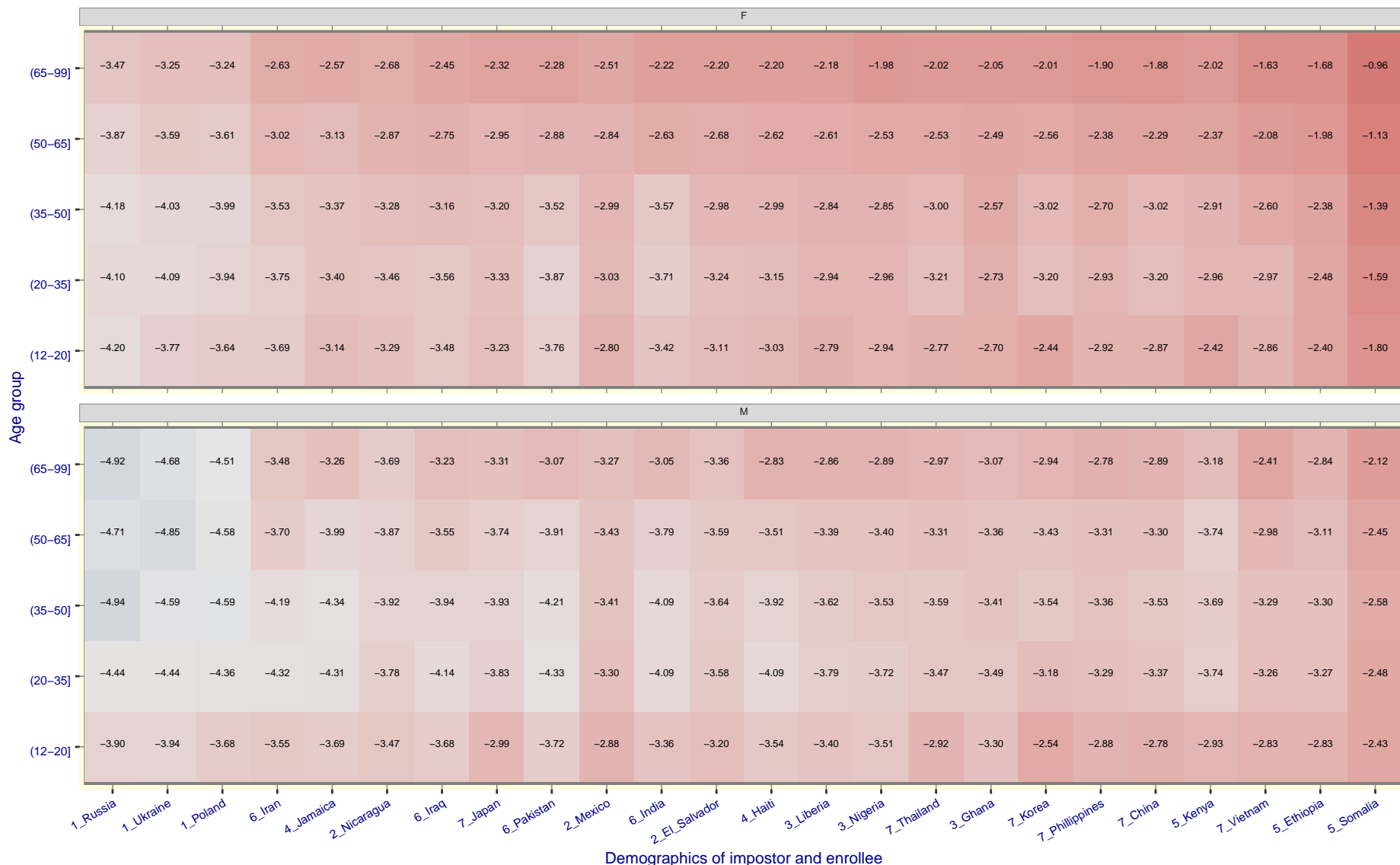
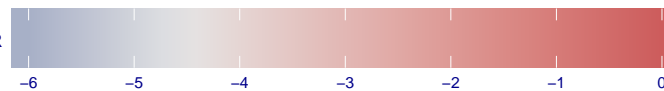
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/amplifiedgroup\_001.pdf

Algorithm: amplifiedgroup\_001 Threshold: 3.658142 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



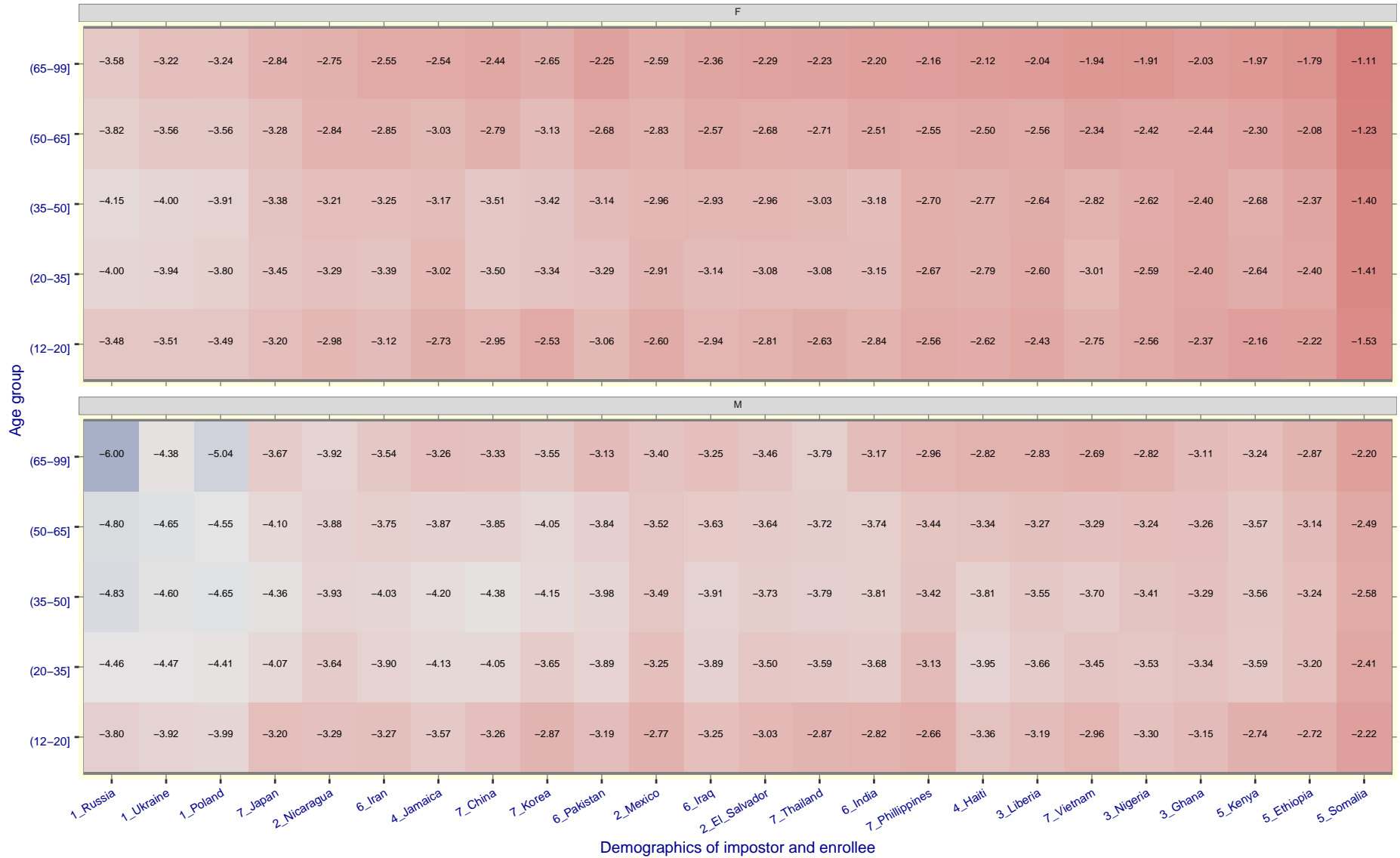
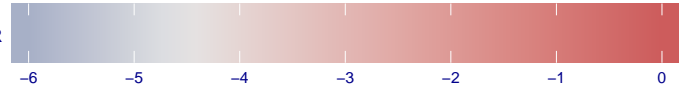
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/anke\_003.pdf

Algorithm: anke\_003 Threshold: 0.435805 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/anke\_004.pdf

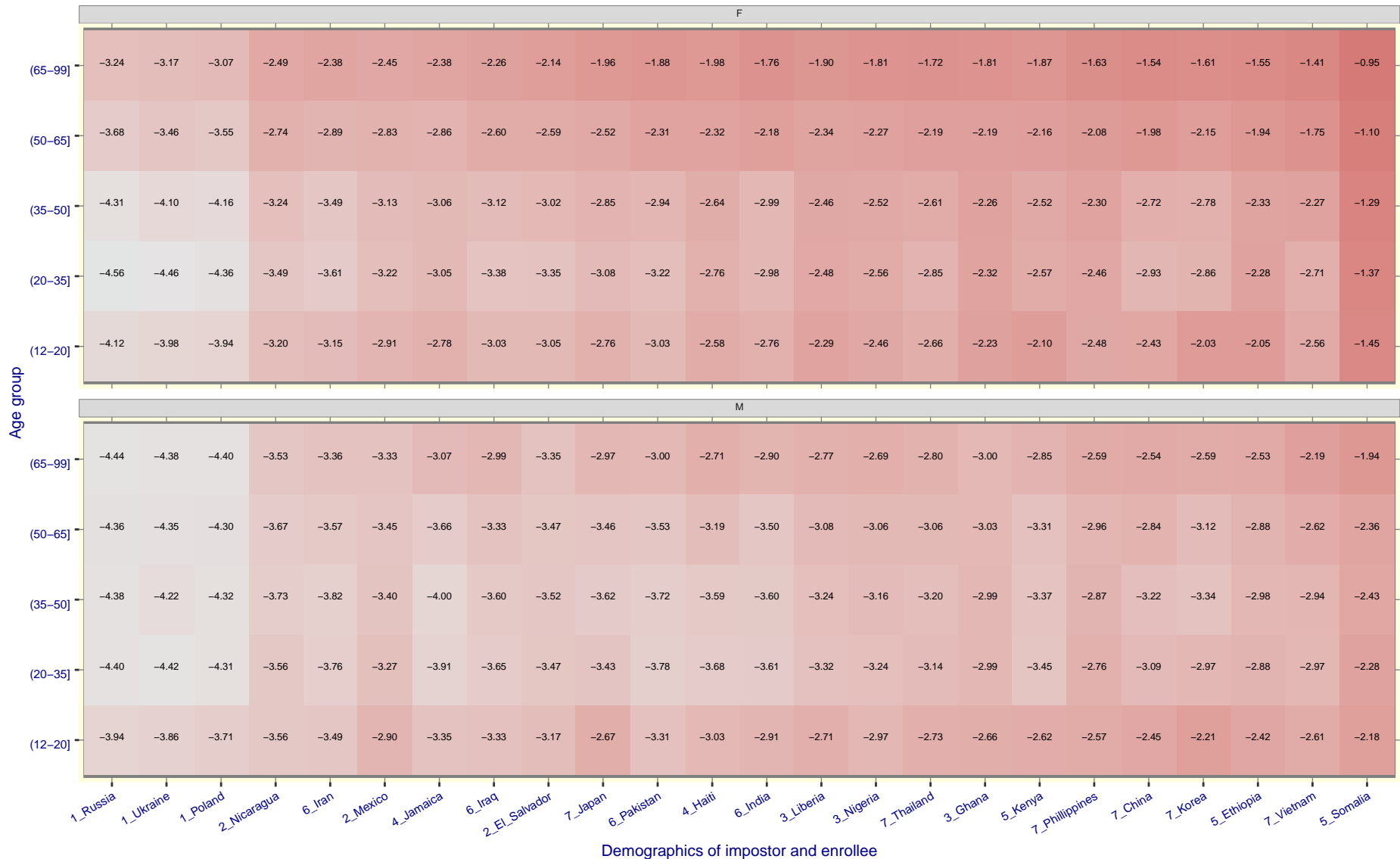
Algorithm: anke\_004 Threshold: 0.425355 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/anyvision\_002.pdf

Algorithm: anyvision\_002 Threshold: 1.546824 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

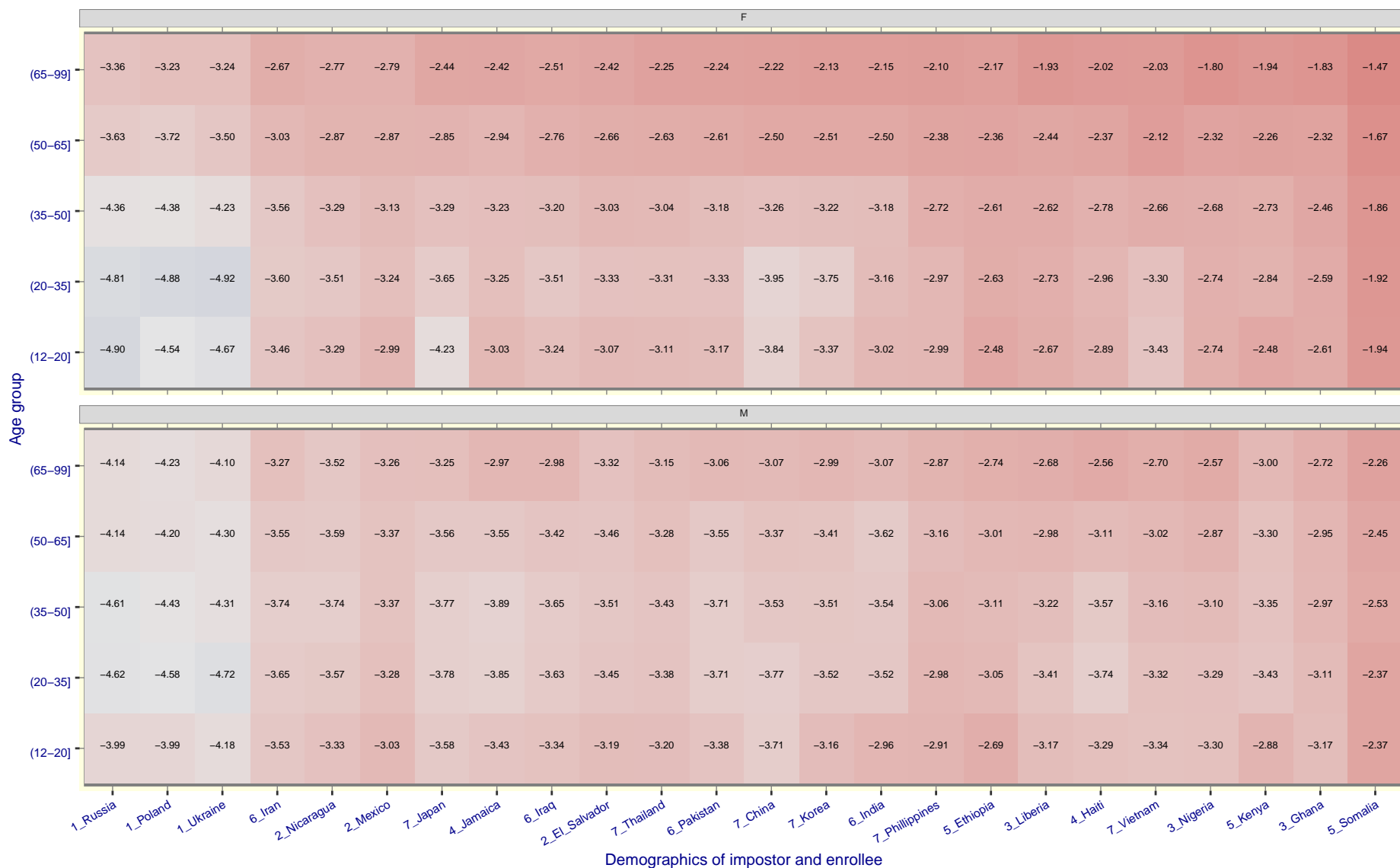
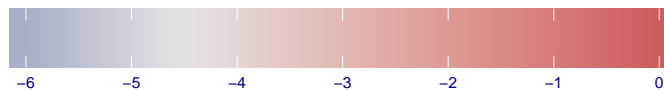
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/anyvision\_004.pdf

Algorithm: anyvision\_004 Threshold: 1.423870 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

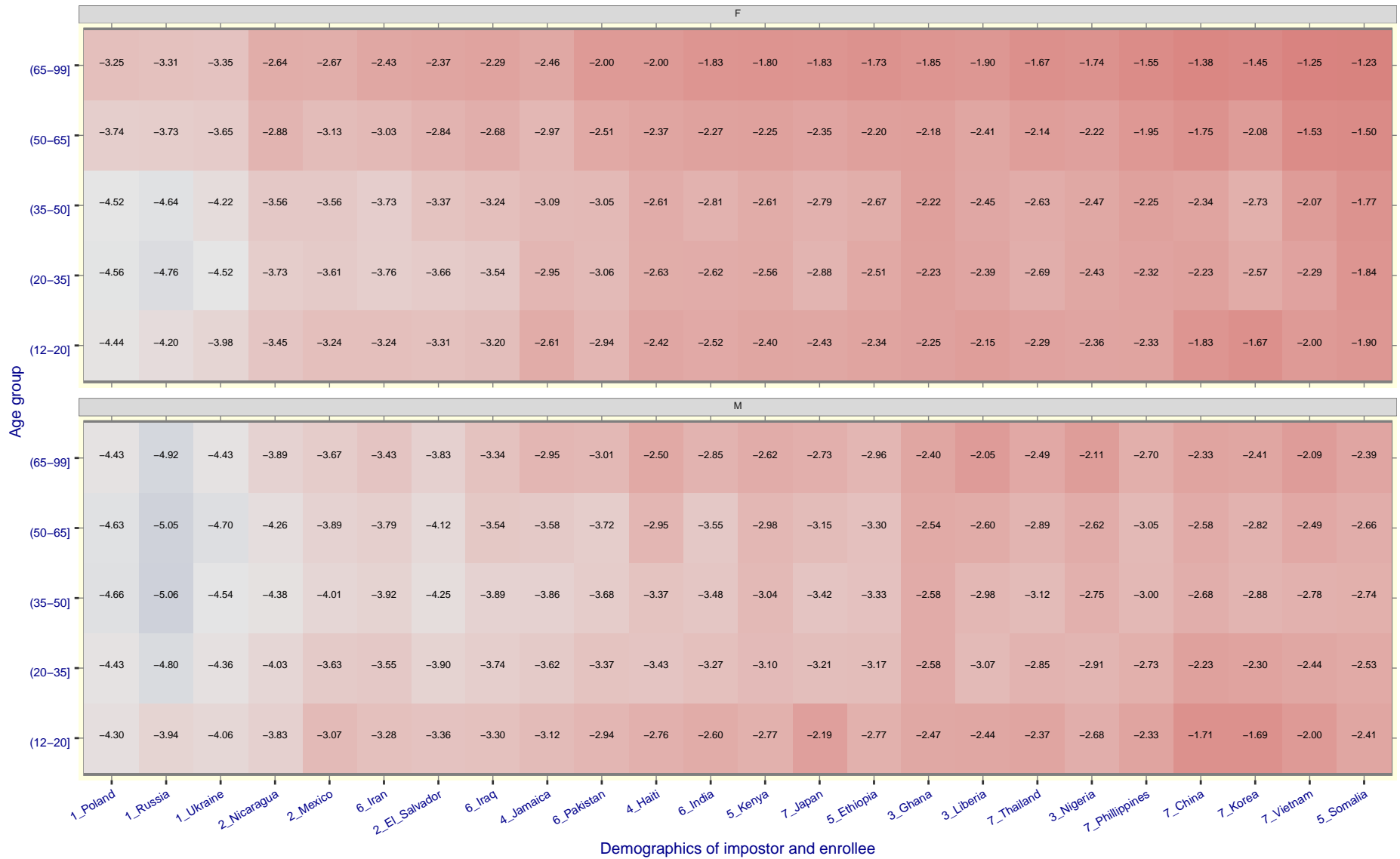
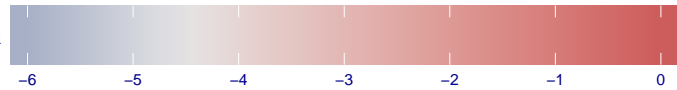
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/aware\_003.pdf

Algorithm: aware\_003 Threshold: 3.674860 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

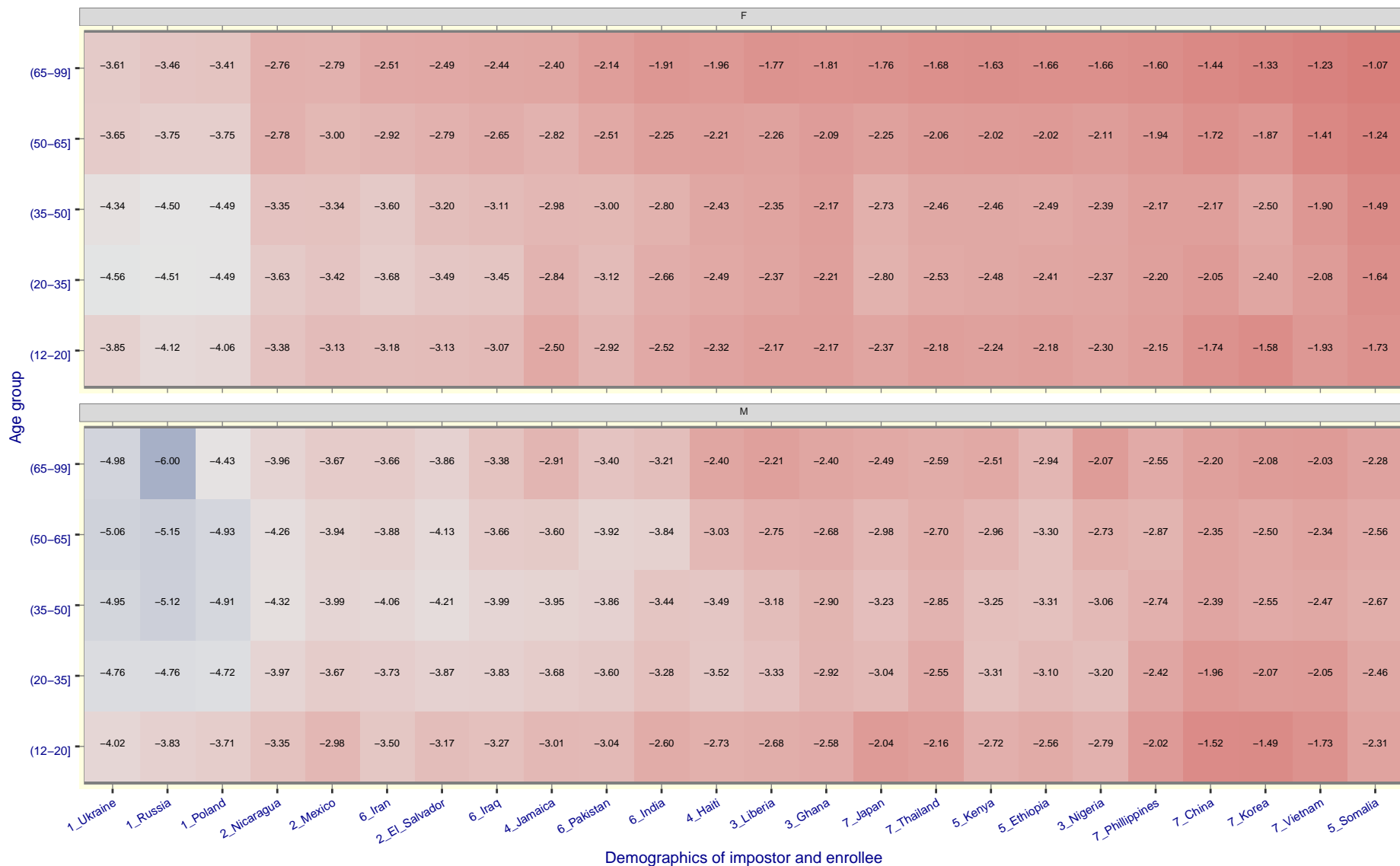
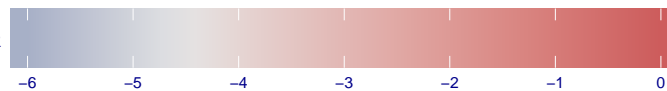


Demographics of impostor and enrollee



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/aware\_004.pdf

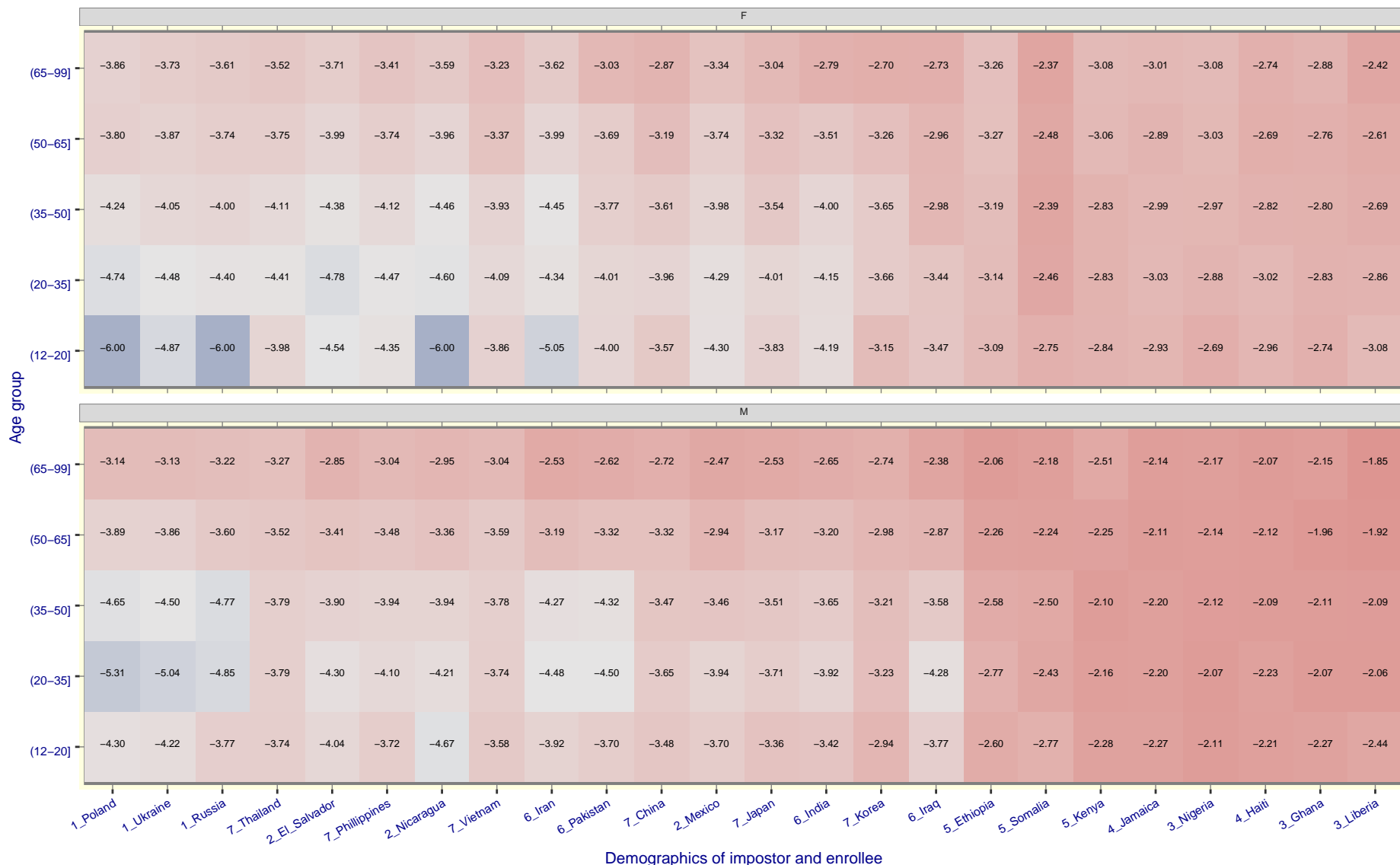
Algorithm: aware\_004 Threshold: 4.690351 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/bm\_001.pdf

Algorithm: bm\_001 Threshold: 0.768096 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

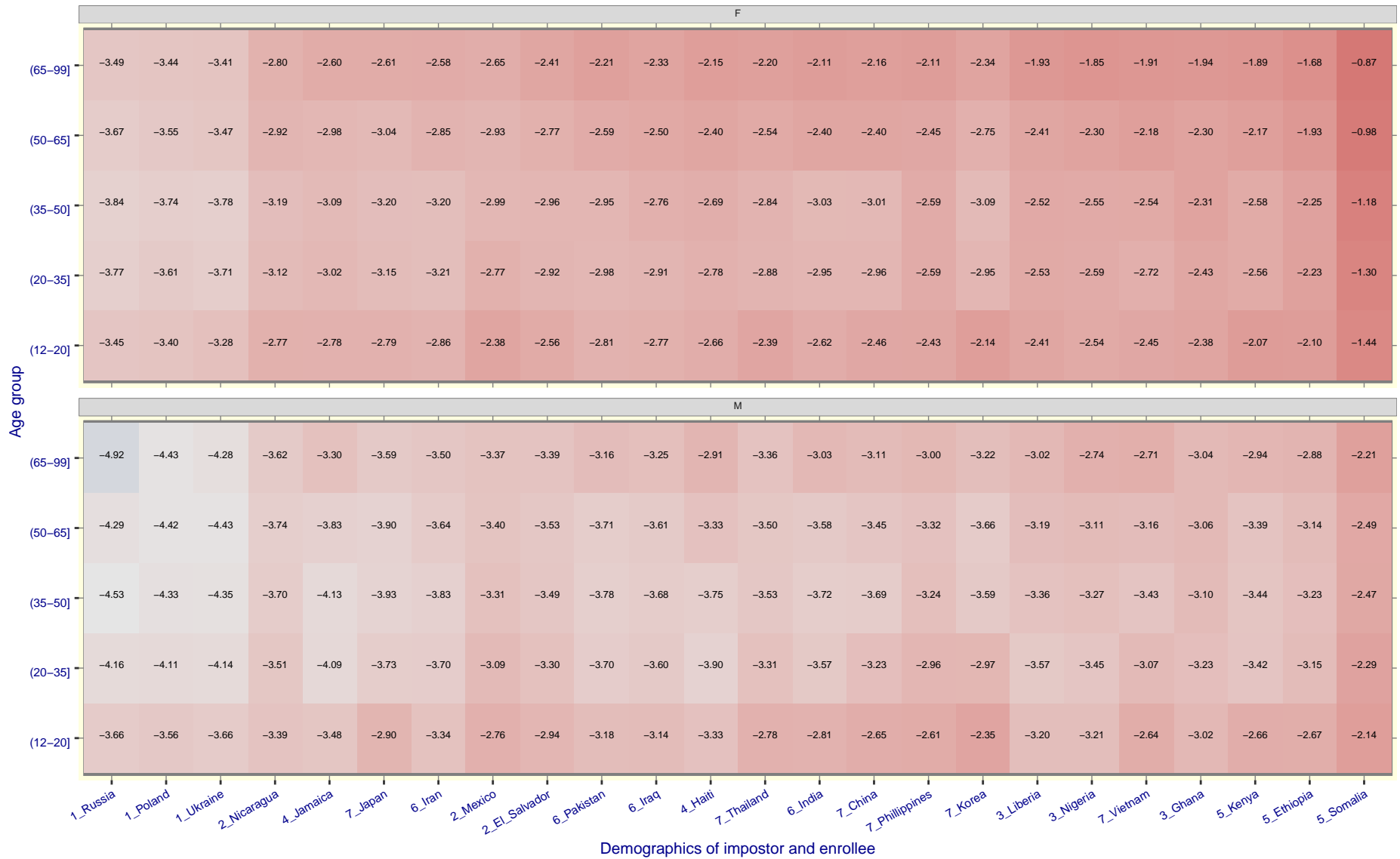
log10 FMR



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/camvi\_002.pdf

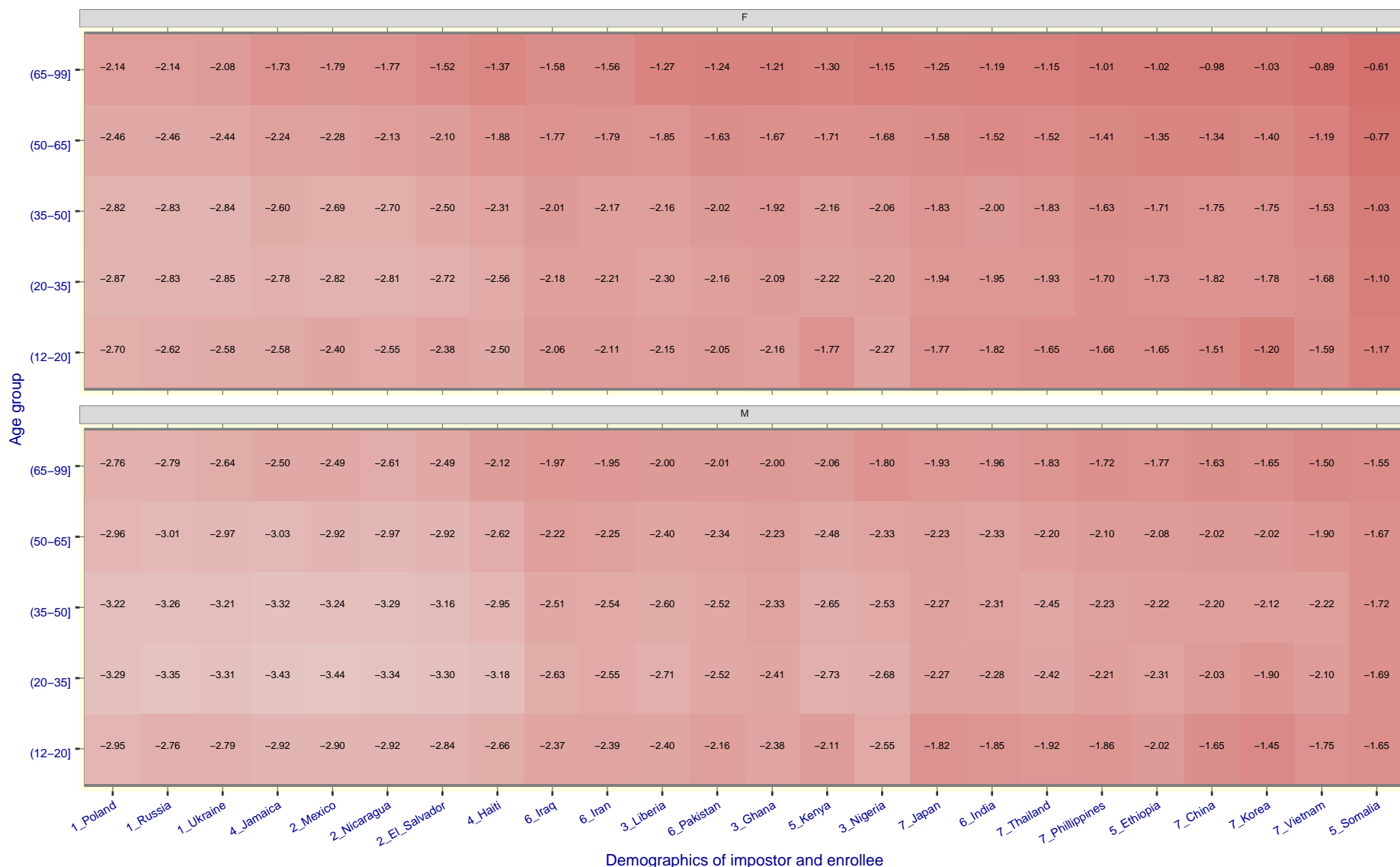
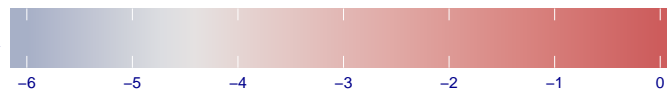
Algorithm: camvi\_002 Threshold: 0.403175 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



Demographics of impostor and enrollee

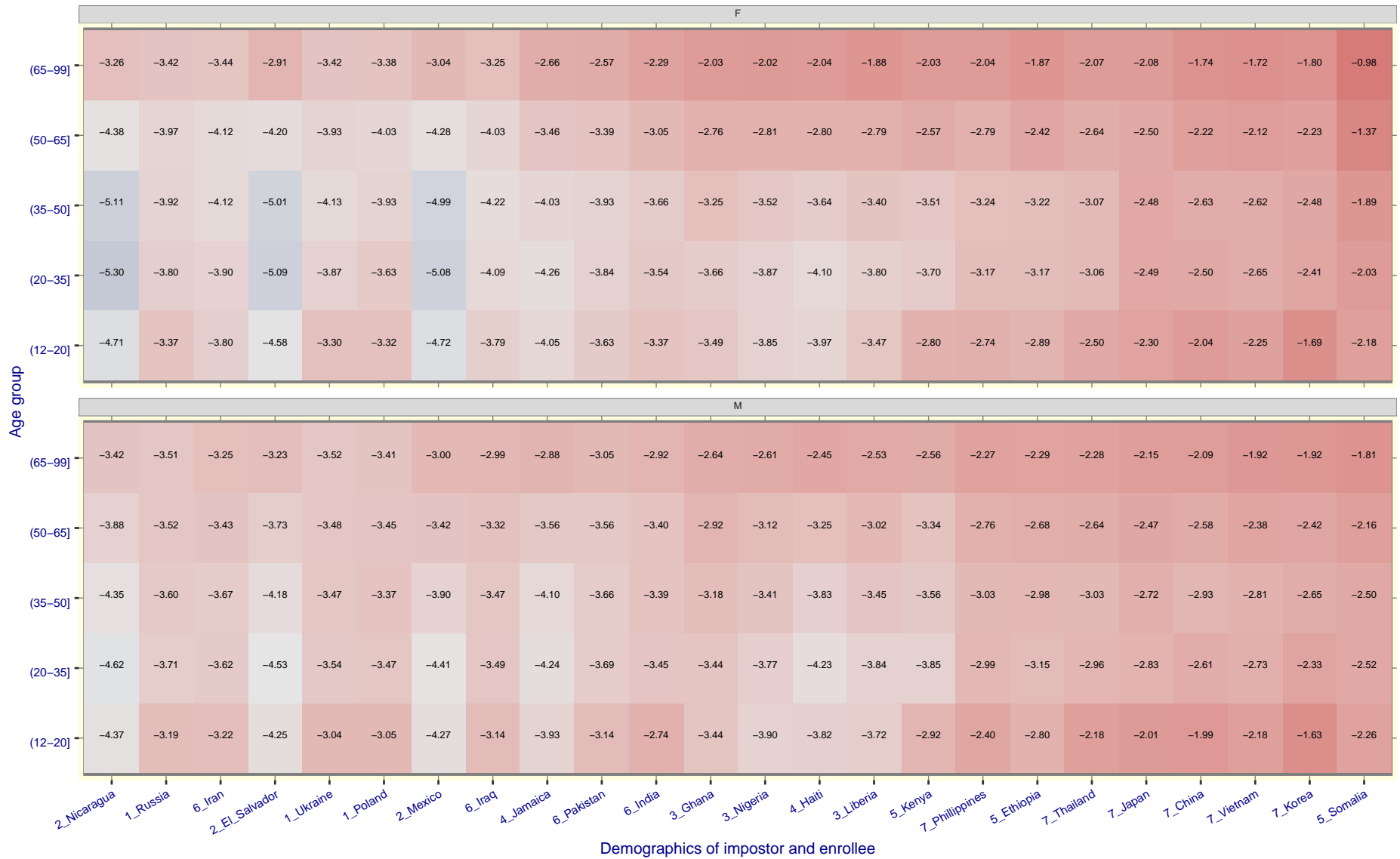
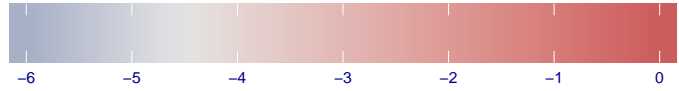
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/camvi\_004.pdf

Algorithm: camvi\_004 Threshold: 0.280160 Dataset: Application Nominal FMR: 0.000030 log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ceiec\_001.pdf

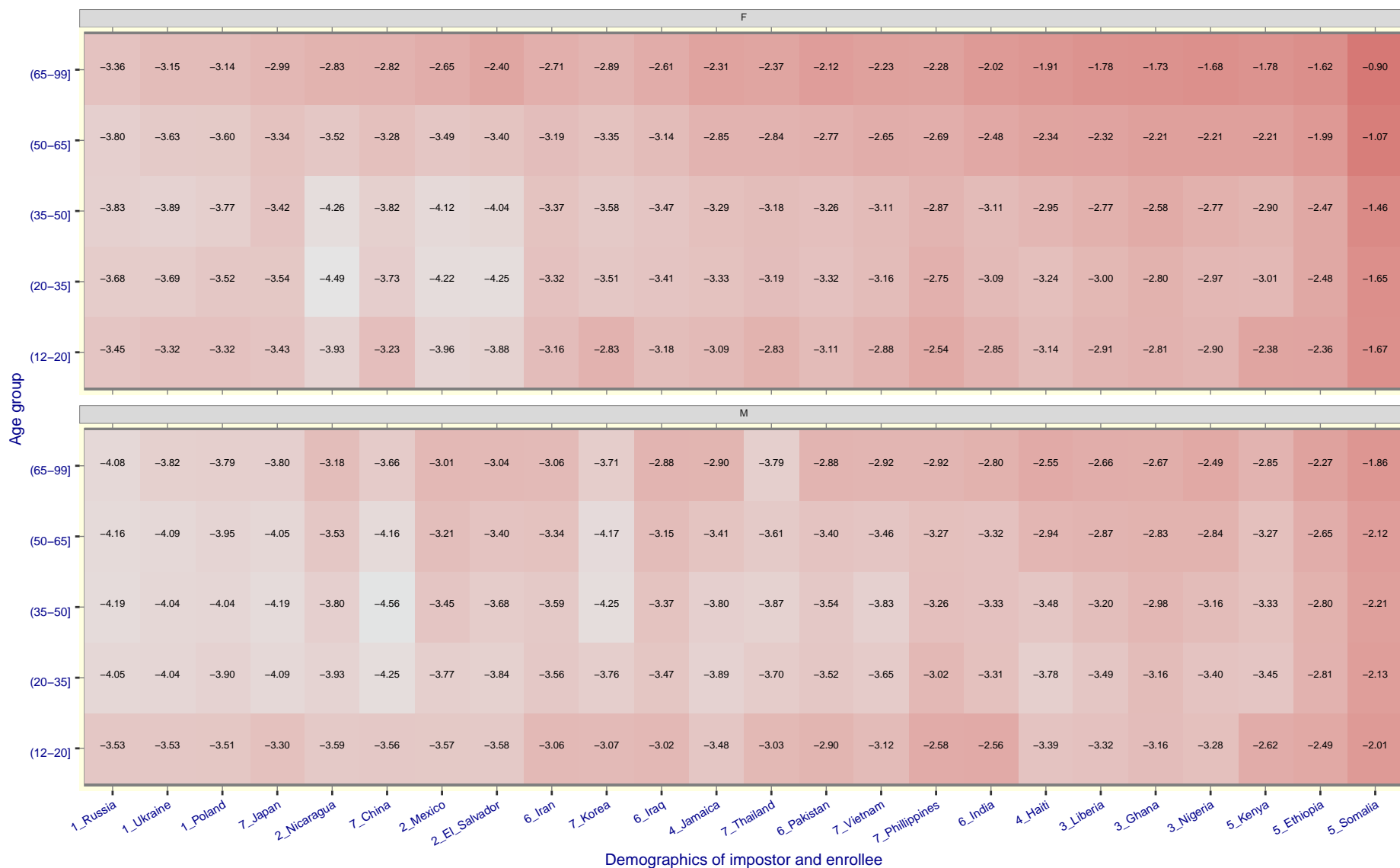
Algorithm: ceiec\_001 Threshold: 0.452596 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ceiec\_002.pdf

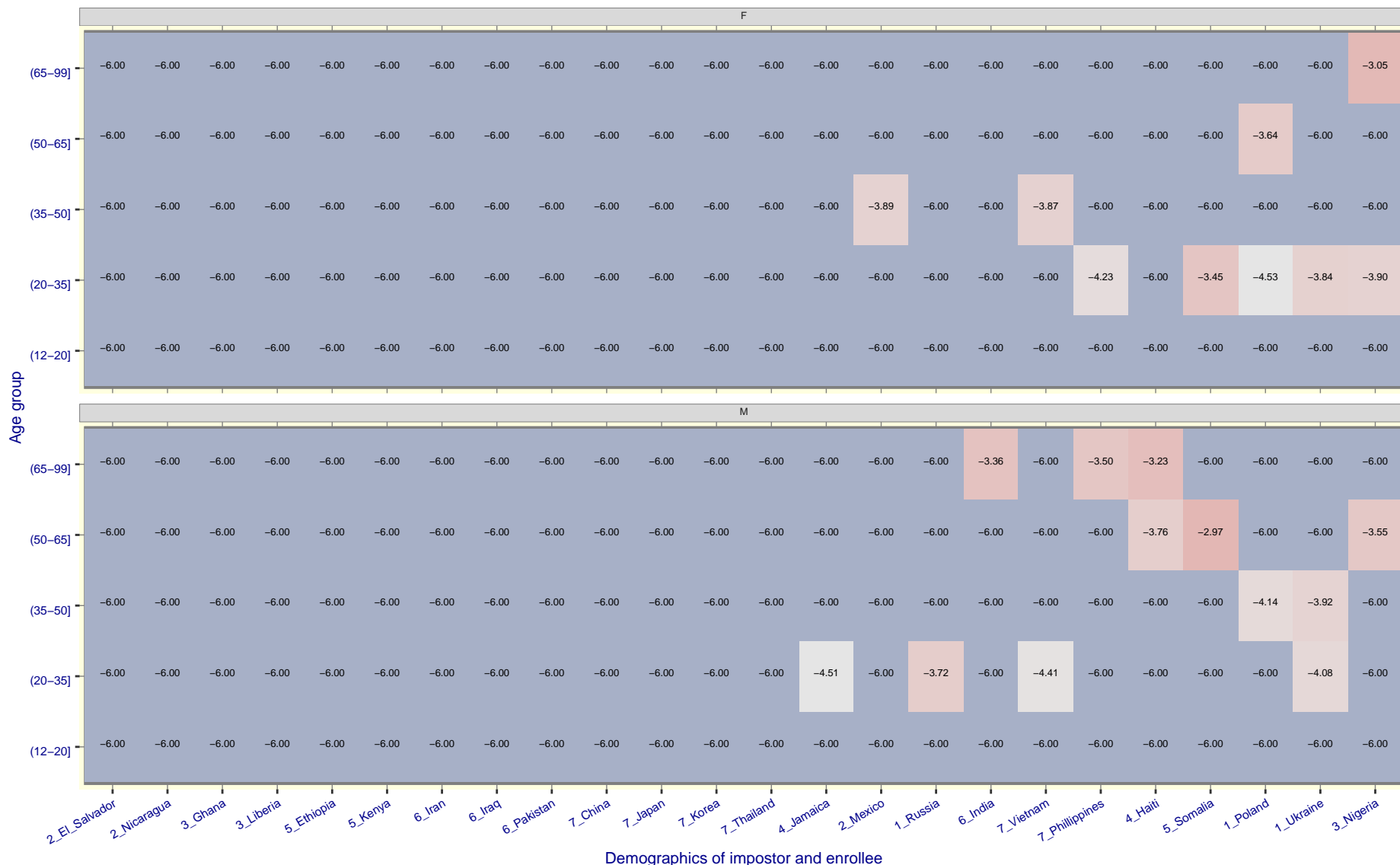
Algorithm: ceiec\_002 Threshold: 0.376085 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/chtface\_001.pdf

Algorithm: chtface\_001 Threshold: 112.359317 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

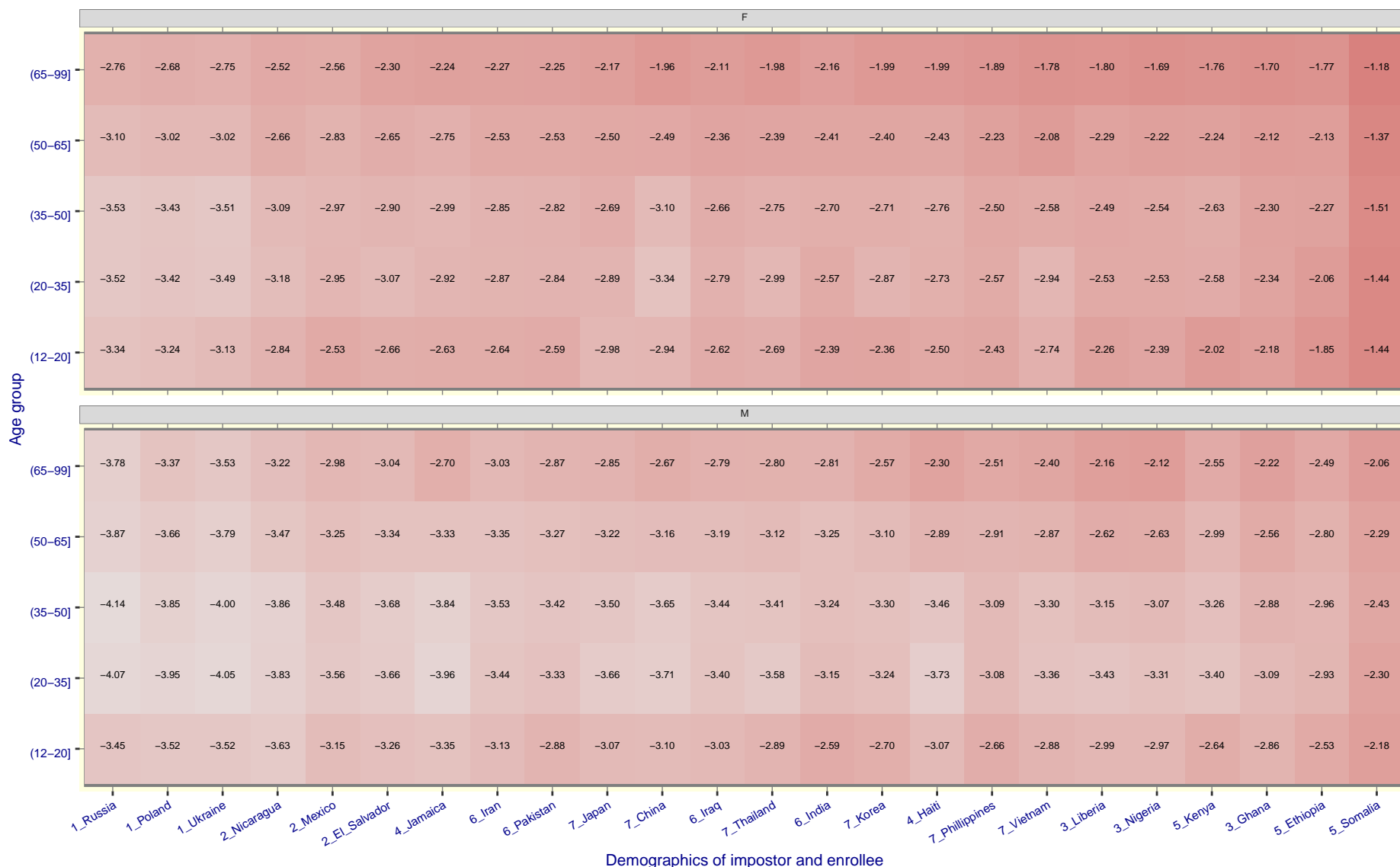
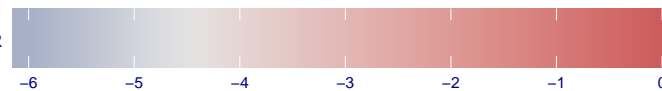
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/cogent\_003.pdf

Algorithm: cogent\_003 Threshold: 2980.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

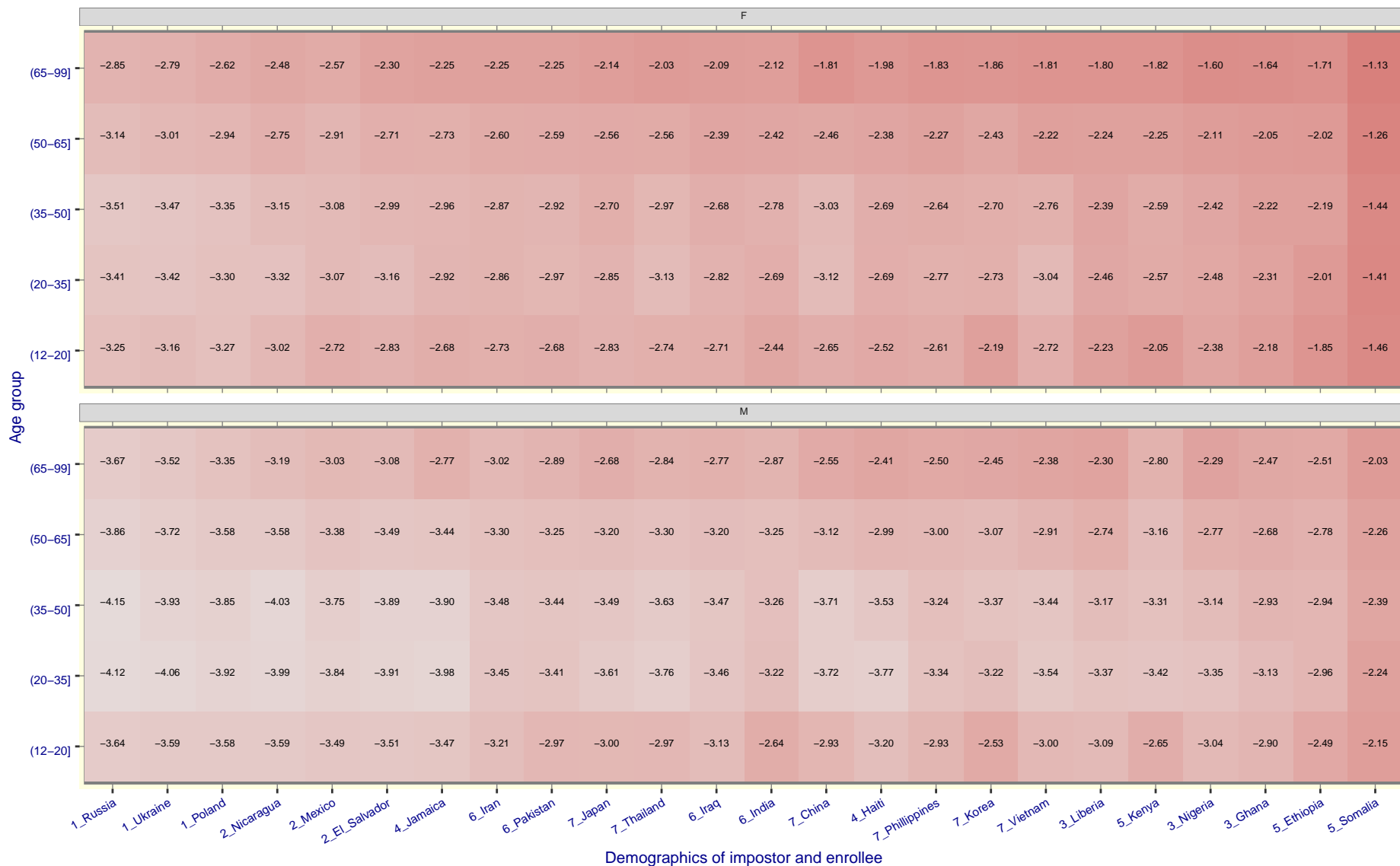




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/cogent\_004.pdf

Algorithm: cogent\_004 Threshold: 3215.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

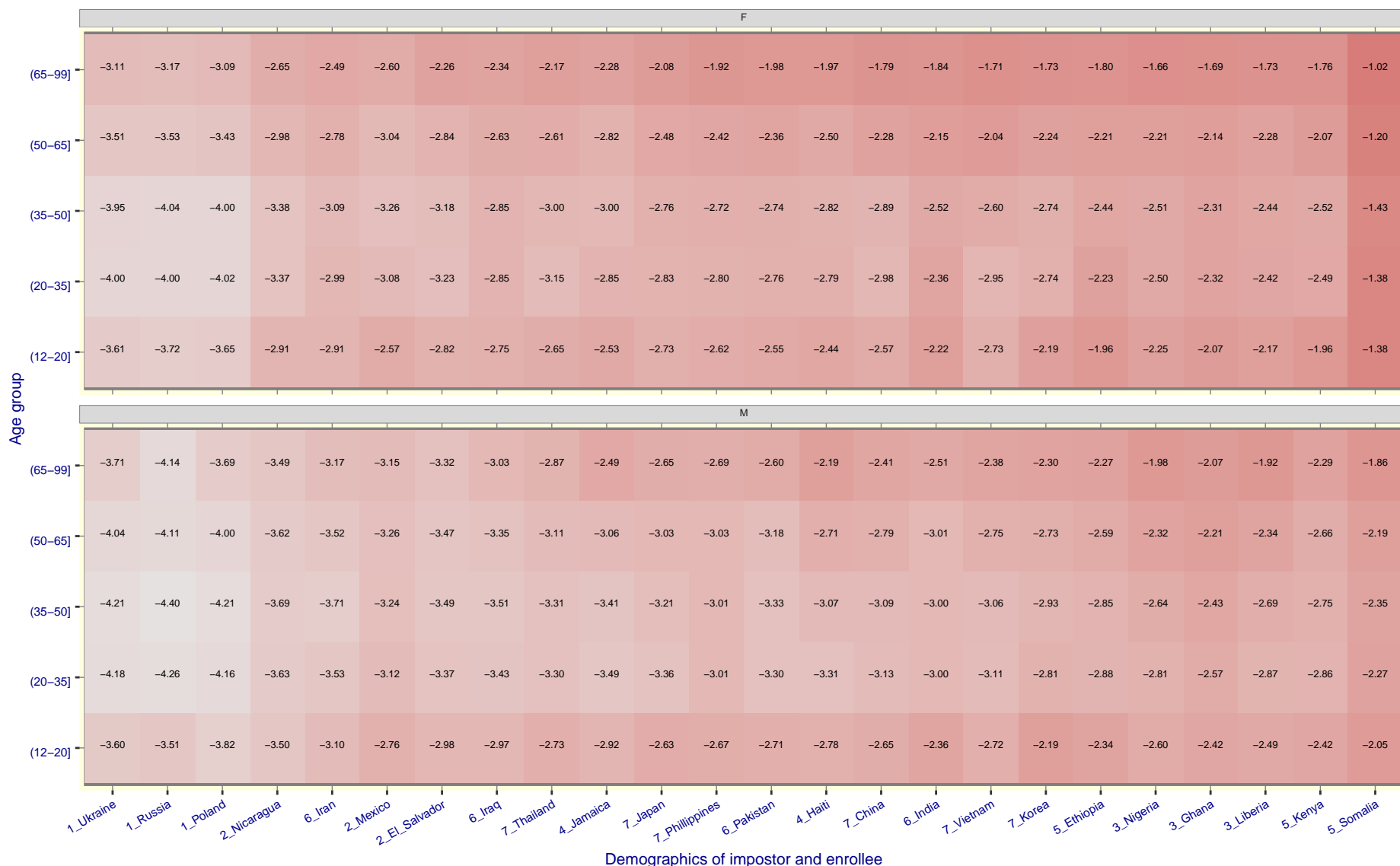
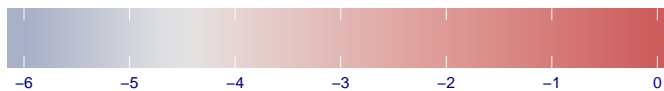
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/cognitec\_000.pdf

Algorithm: cognitec\_000 Threshold: 0.568691 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

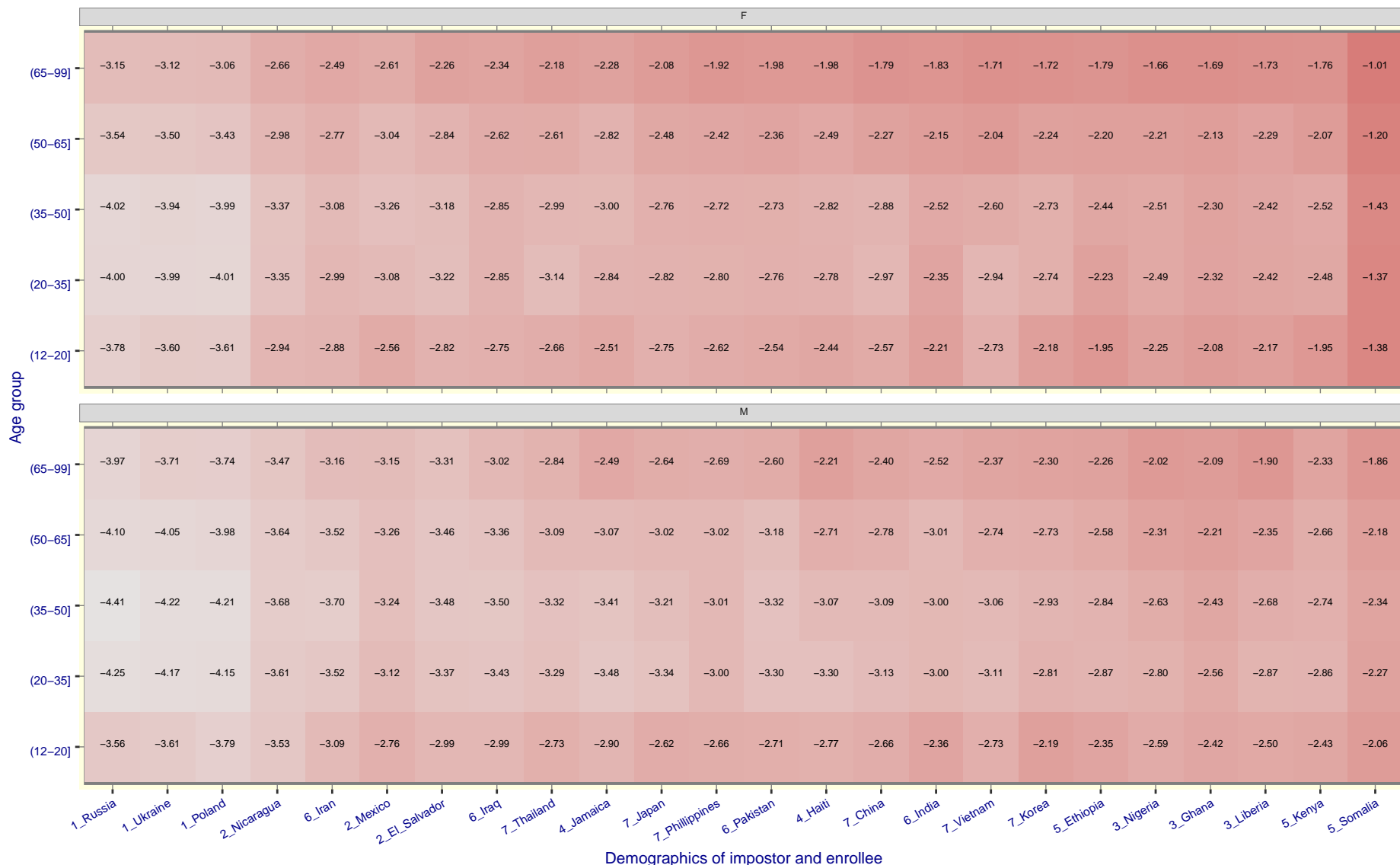
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/cognitec\_001.pdf

Algorithm: cognitec\_001 Threshold: 0.568527 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

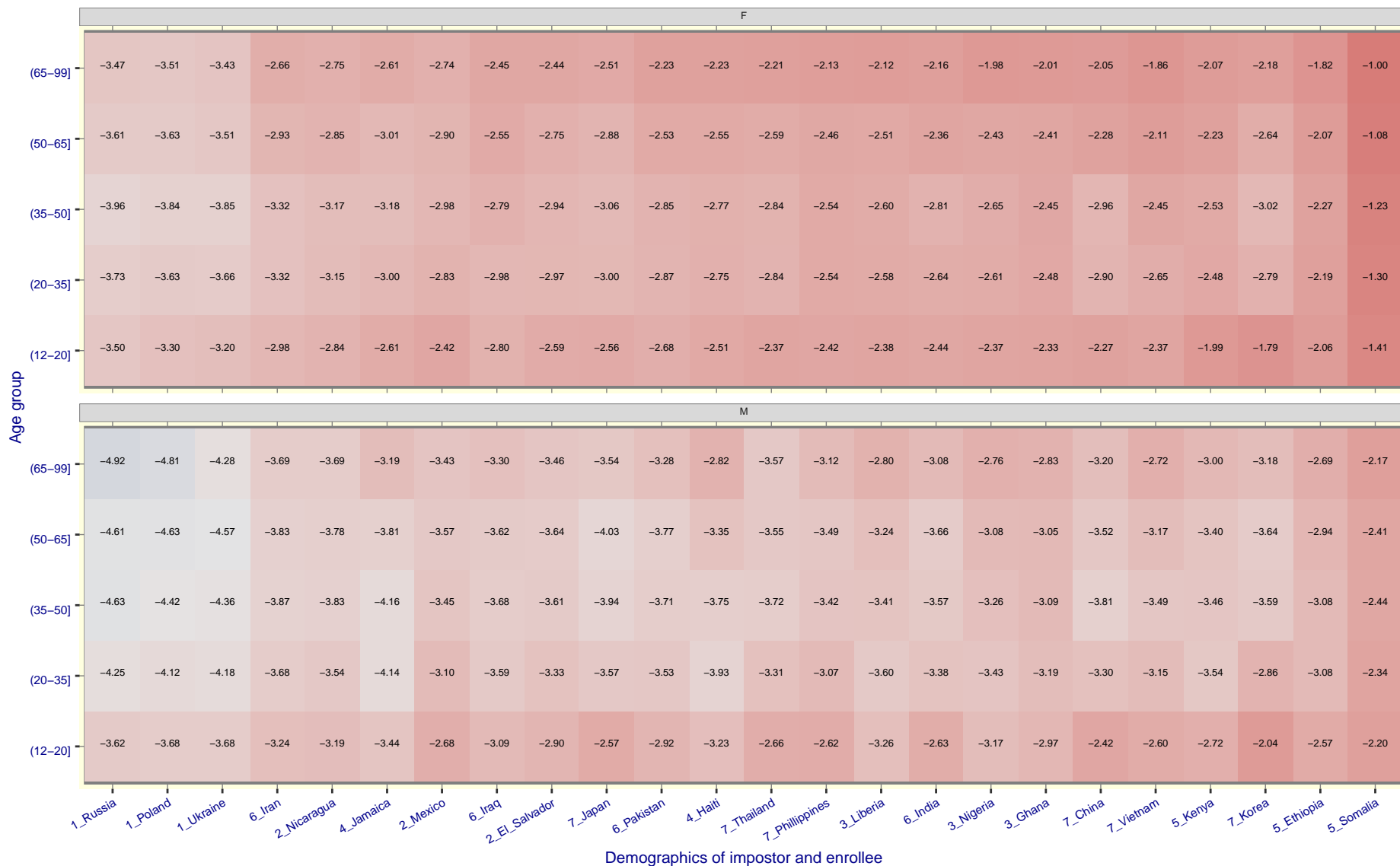
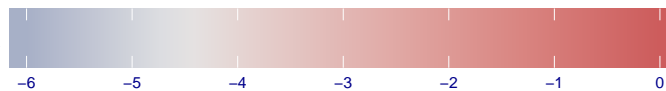
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ctcbank\_000.pdf

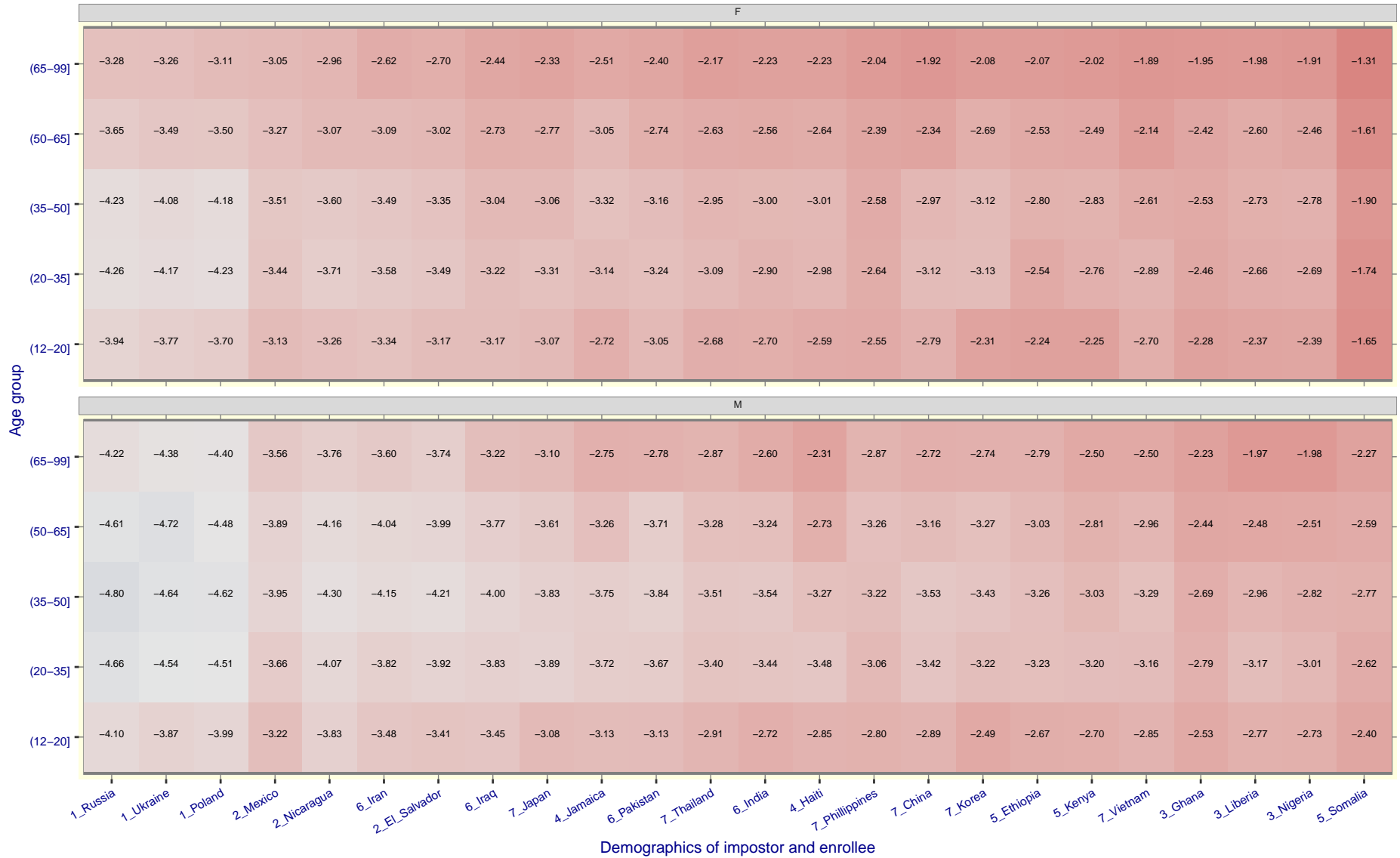
Algorithm: ctcbank\_000 Threshold: 3.751842 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/cyberextruder\_002.pdf

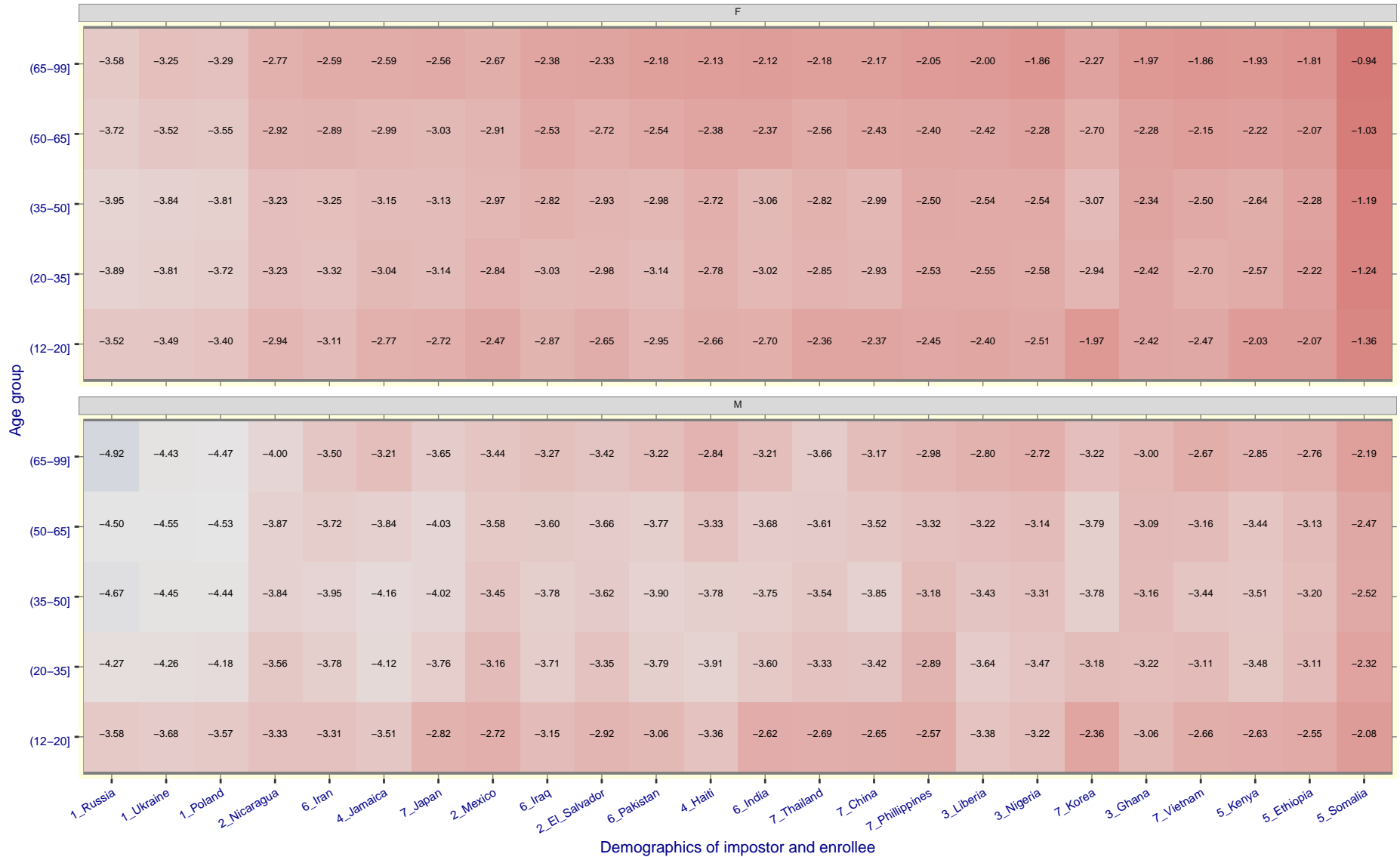
Algorithm: cyberextruder\_002 Threshold: 0.509514 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/cyberlink\_002.pdf

Algorithm: cyberlink\_002 Threshold: 1.423990 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

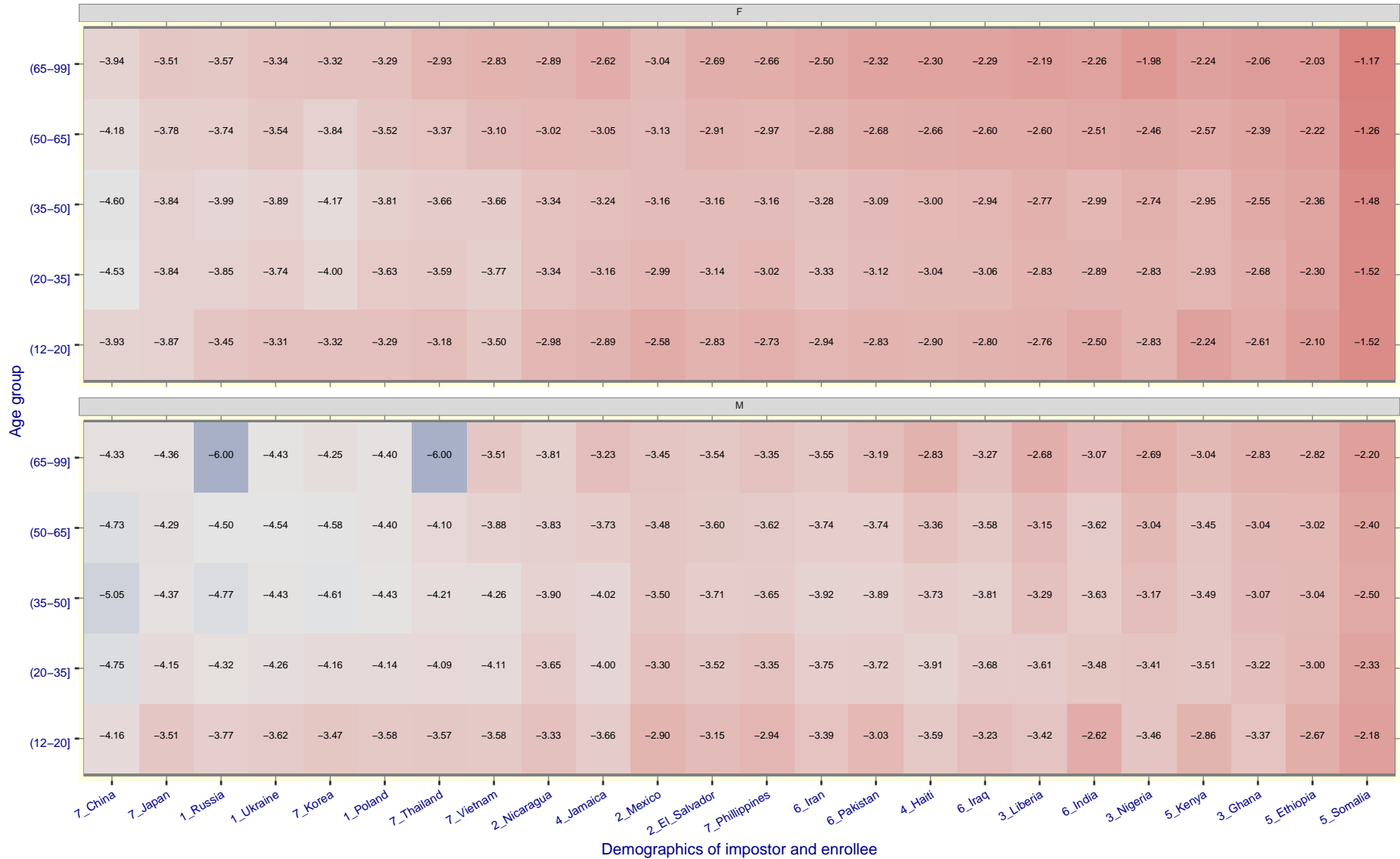
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/dahua\_002.pdf

Algorithm: dahua\_002 Threshold: 7206.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

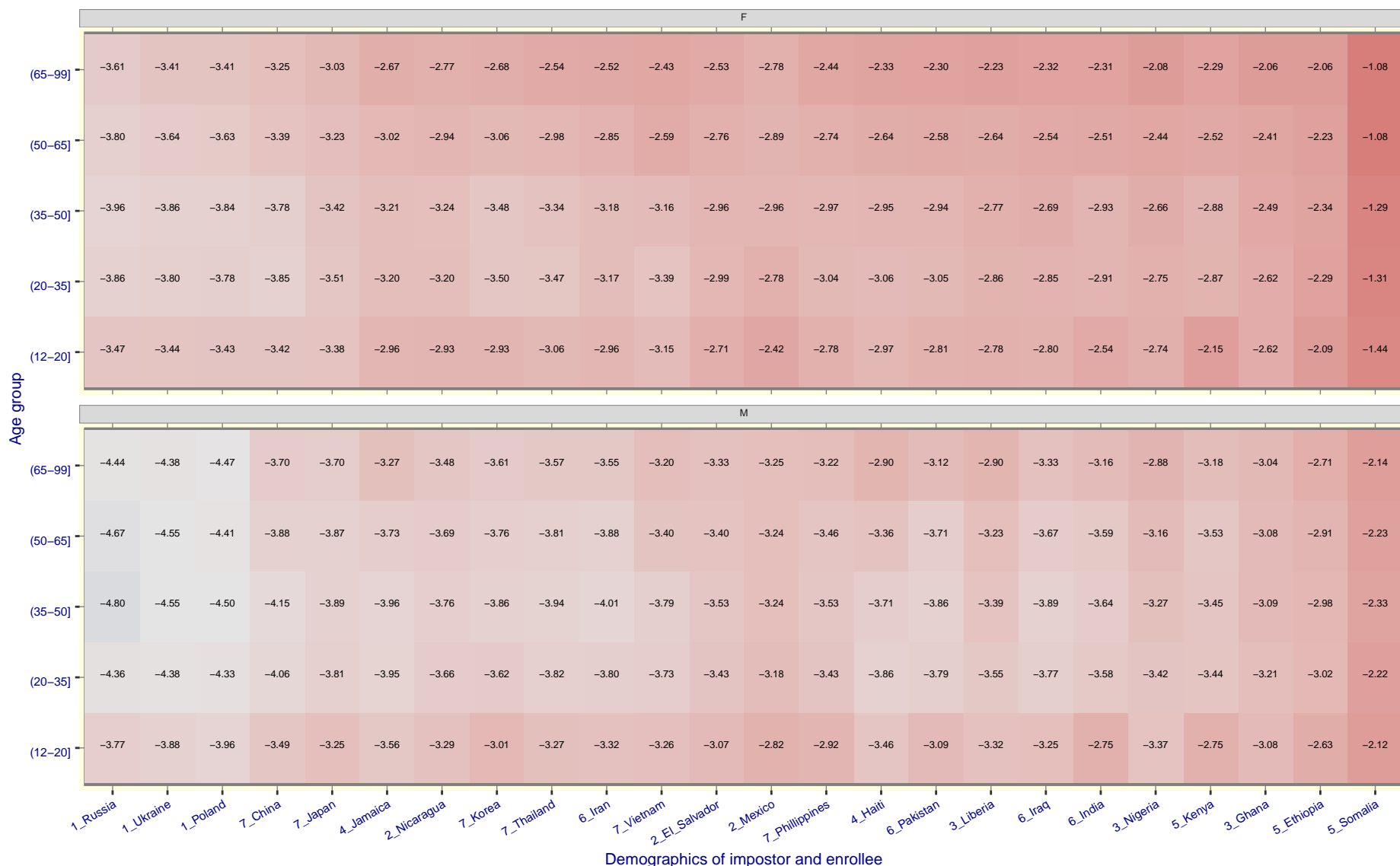
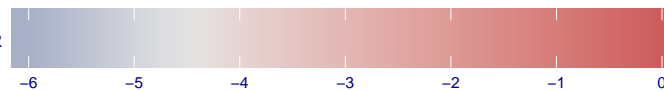
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/dahua\_003.pdf

Algorithm: dahua\_003 Threshold: 6430.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

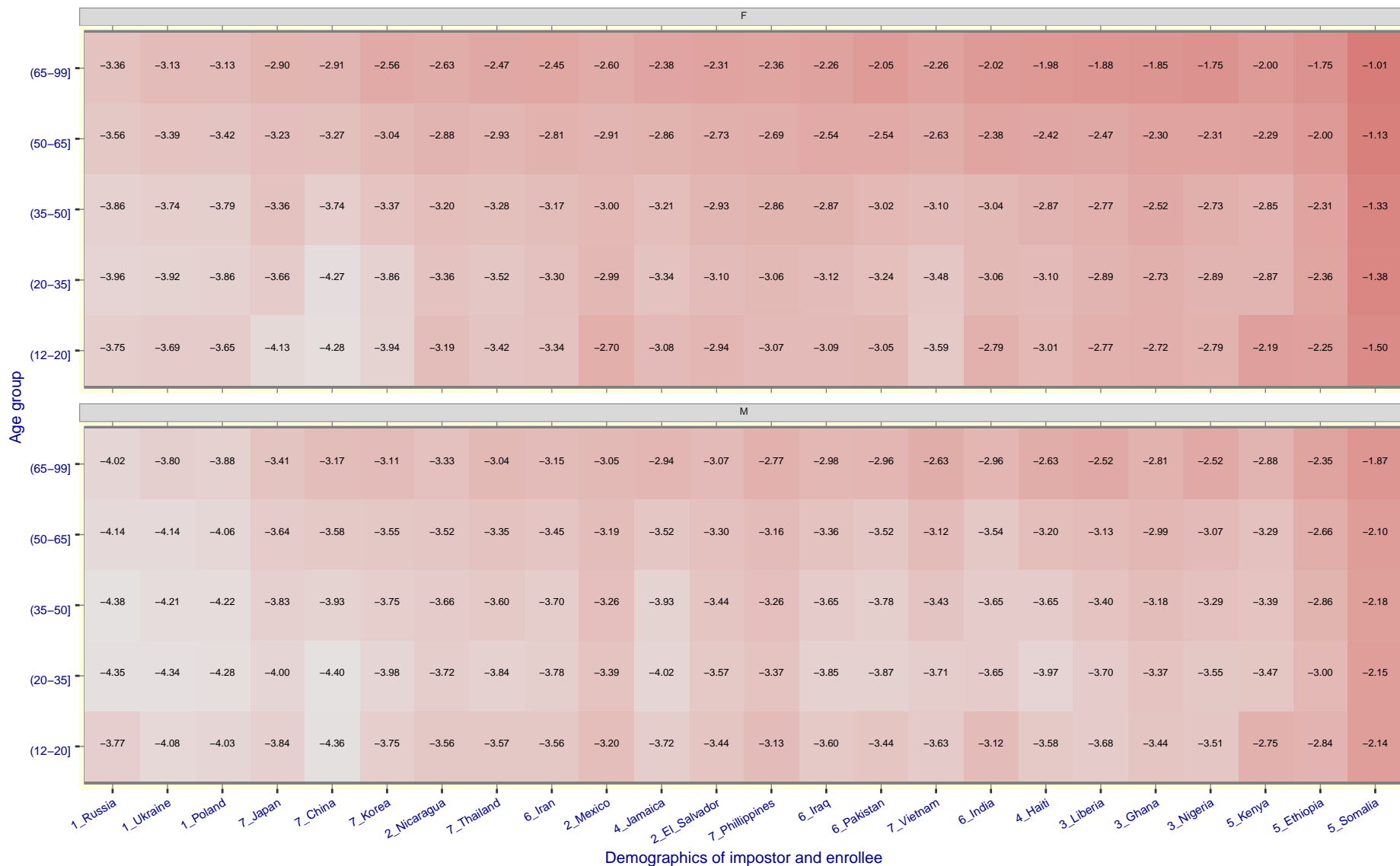
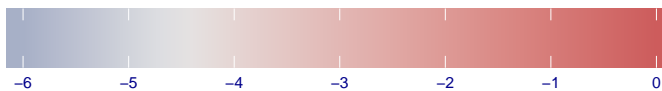




reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/deepglint\_001.pdf

Algorithm: deepglint\_001 Threshold: 1.398960 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

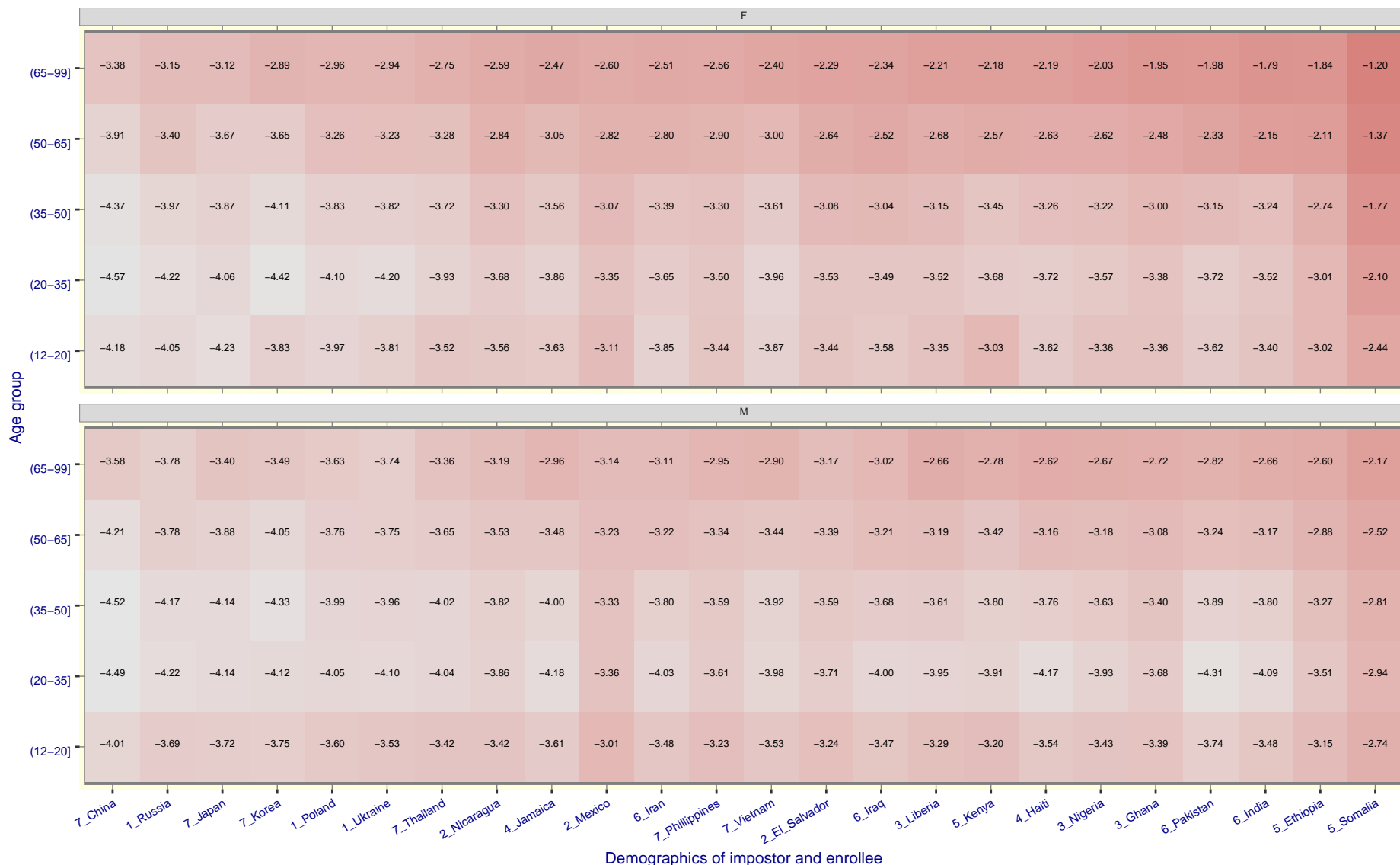
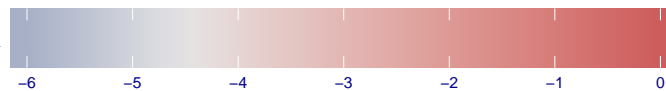
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/deepsea\_001.pdf

Algorithm: deepsea\_001 Threshold: 1.400730 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

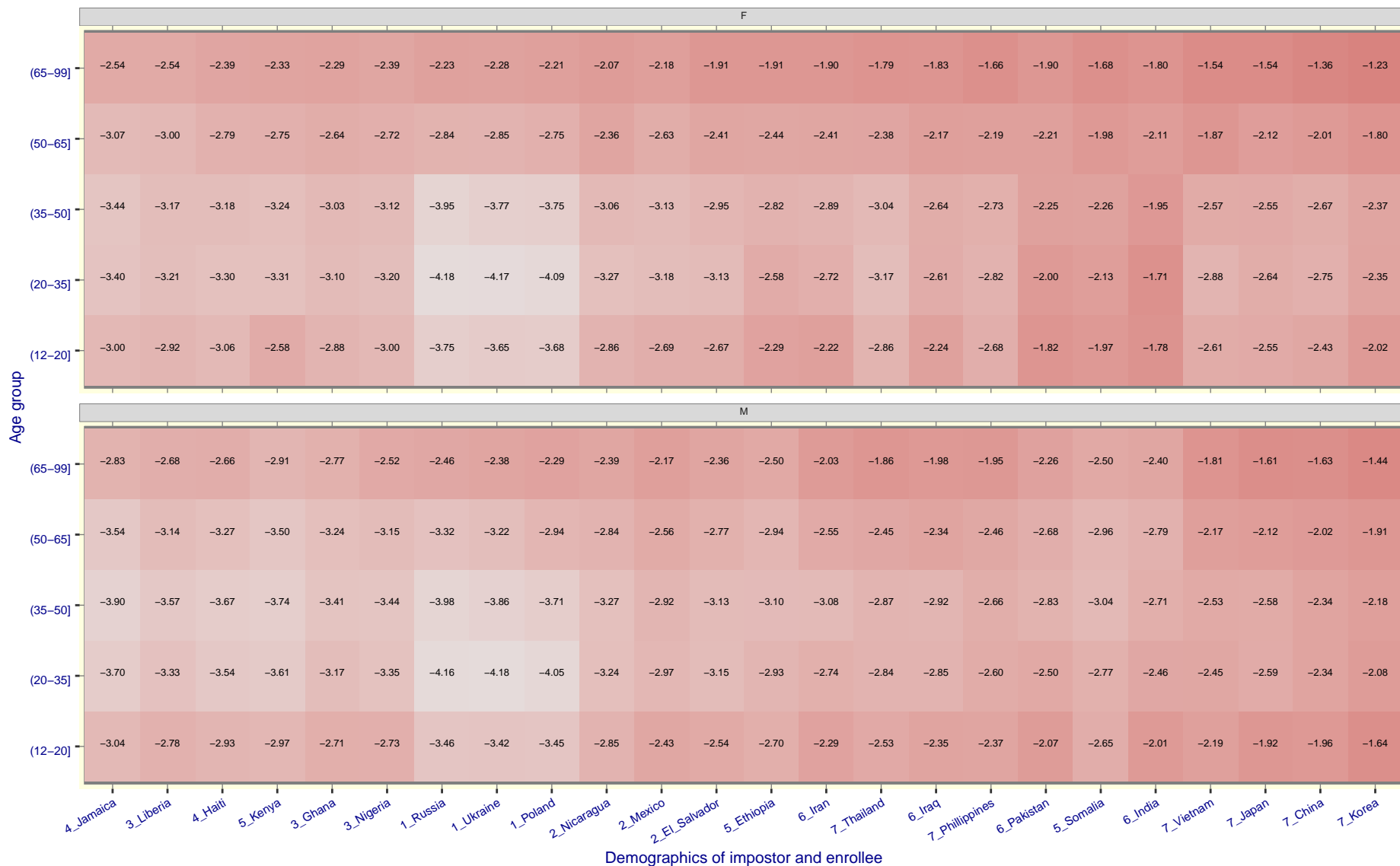
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/dermalog\_005.pdf

Algorithm: dermalog\_005 Threshold: 78.870407 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

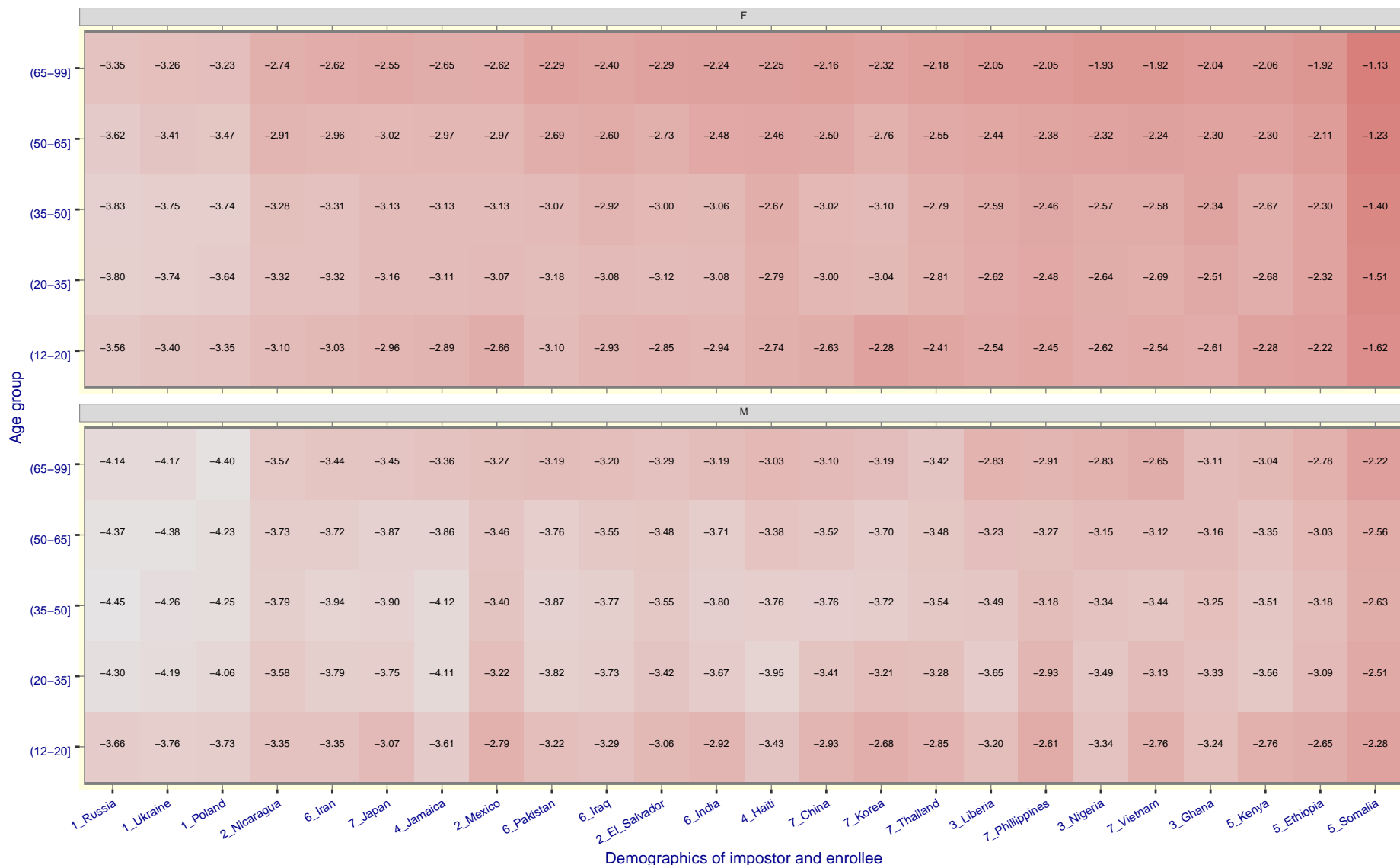
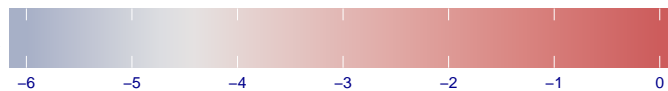


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/dermalog\_006.pdf

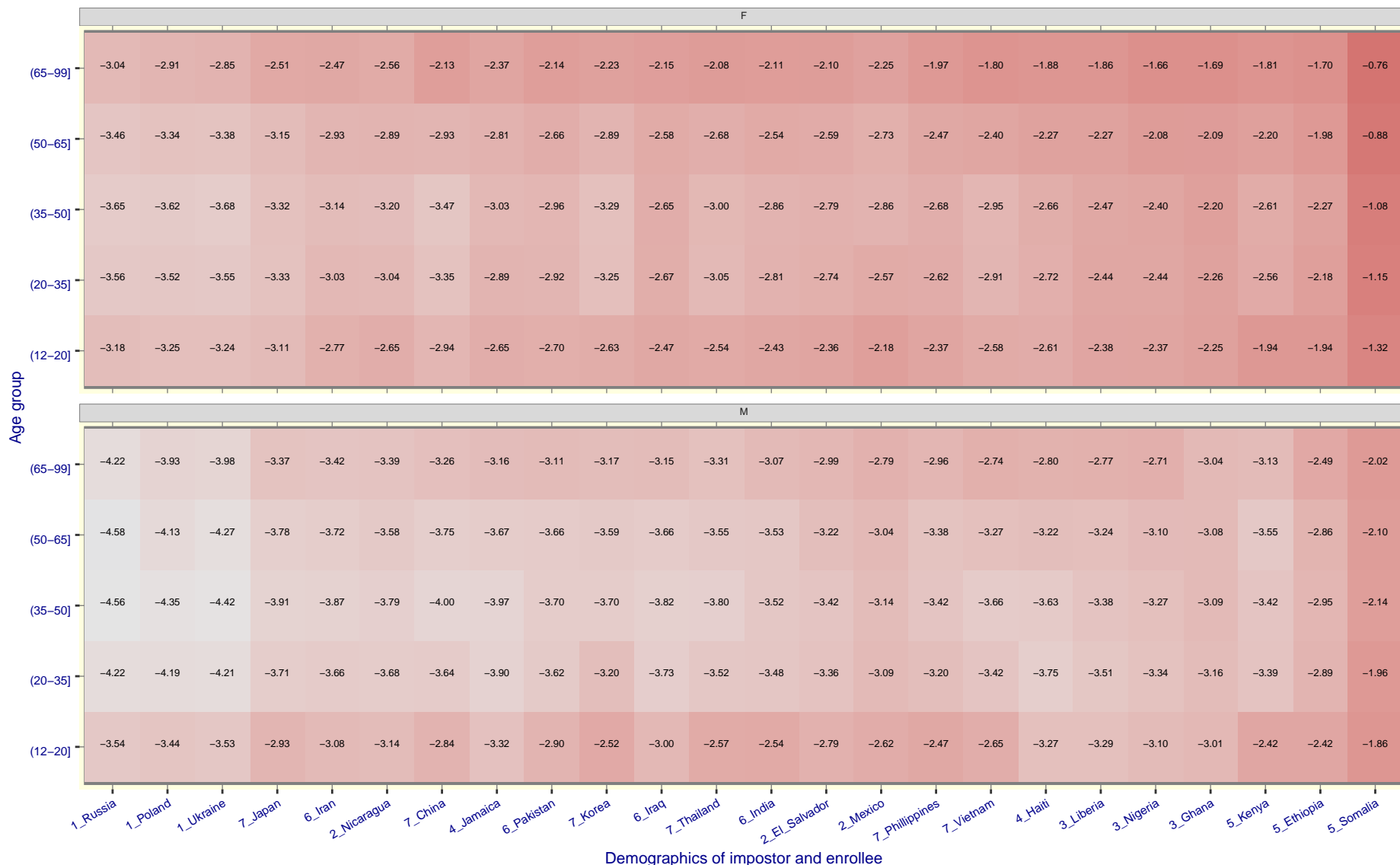
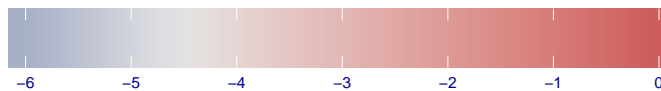
Algorithm: dermalog\_006 Threshold: 80.499900 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



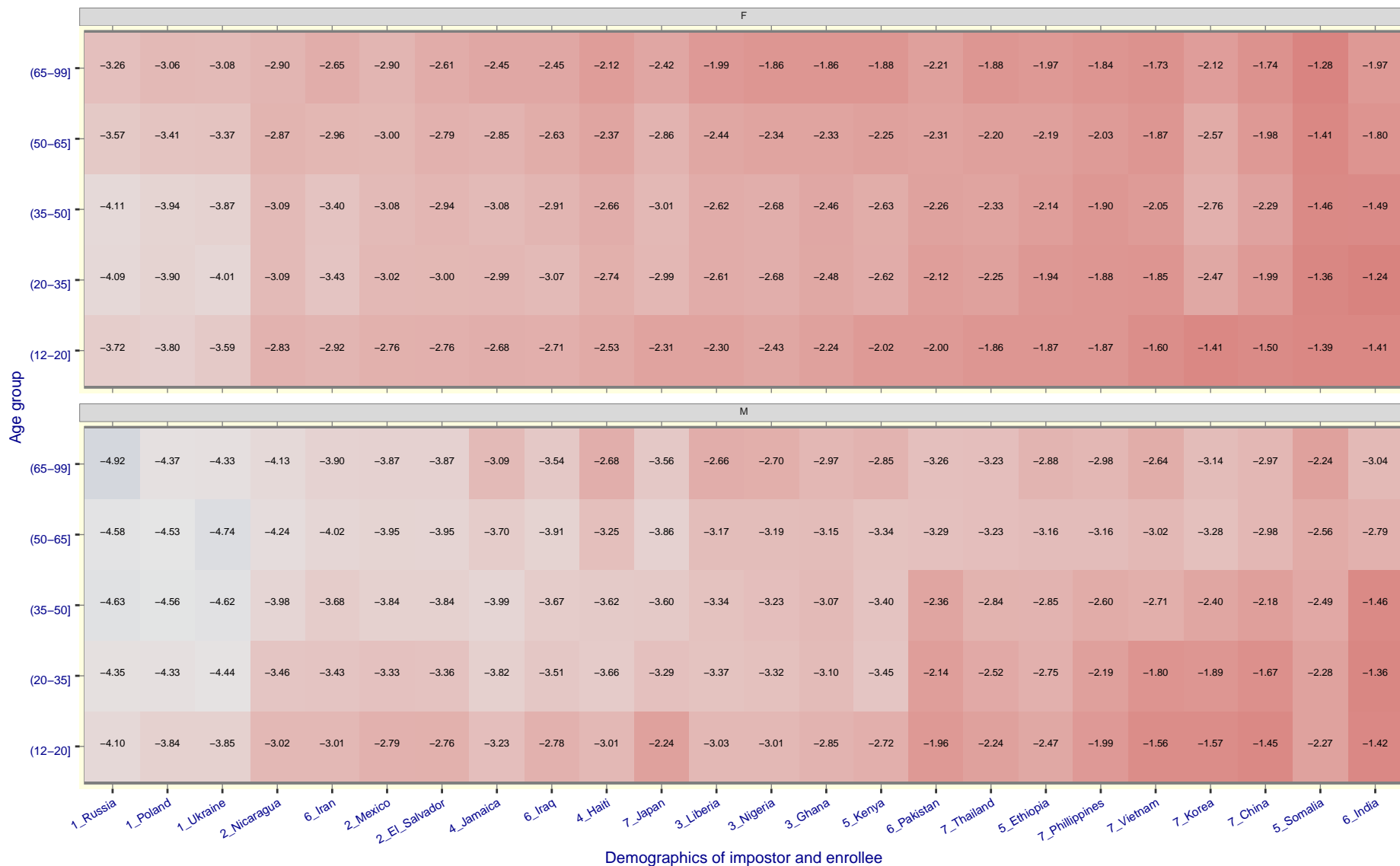
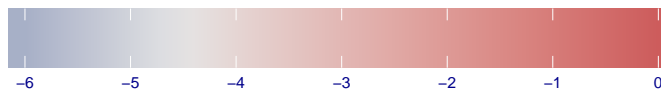
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/didiglobalface\_001.pdf

Algorithm: didiglobalface\_001 Threshold: 0.360225 Dataset: Application Nominal FMR: 0.000030 log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/digitalbarriers\_002.pdf

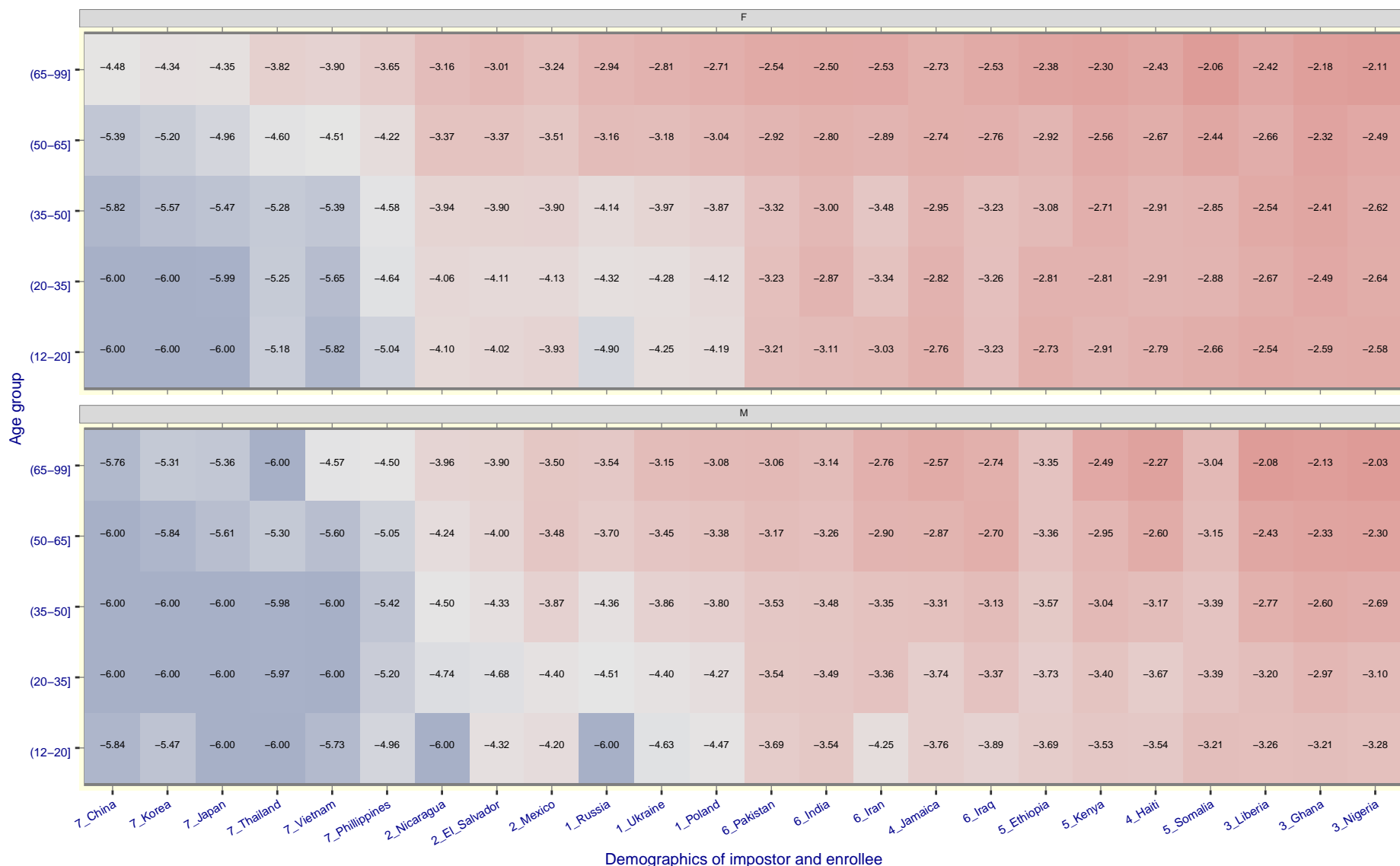
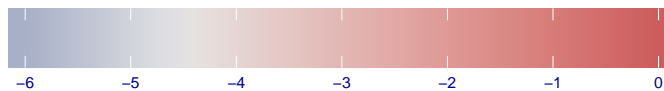
Algorithm: digitalbarriers\_002 Threshold: 0.528095 Dataset: Application Nominal FMR: 0.000030 log10 FMR



Demographics of impostor and enrollee

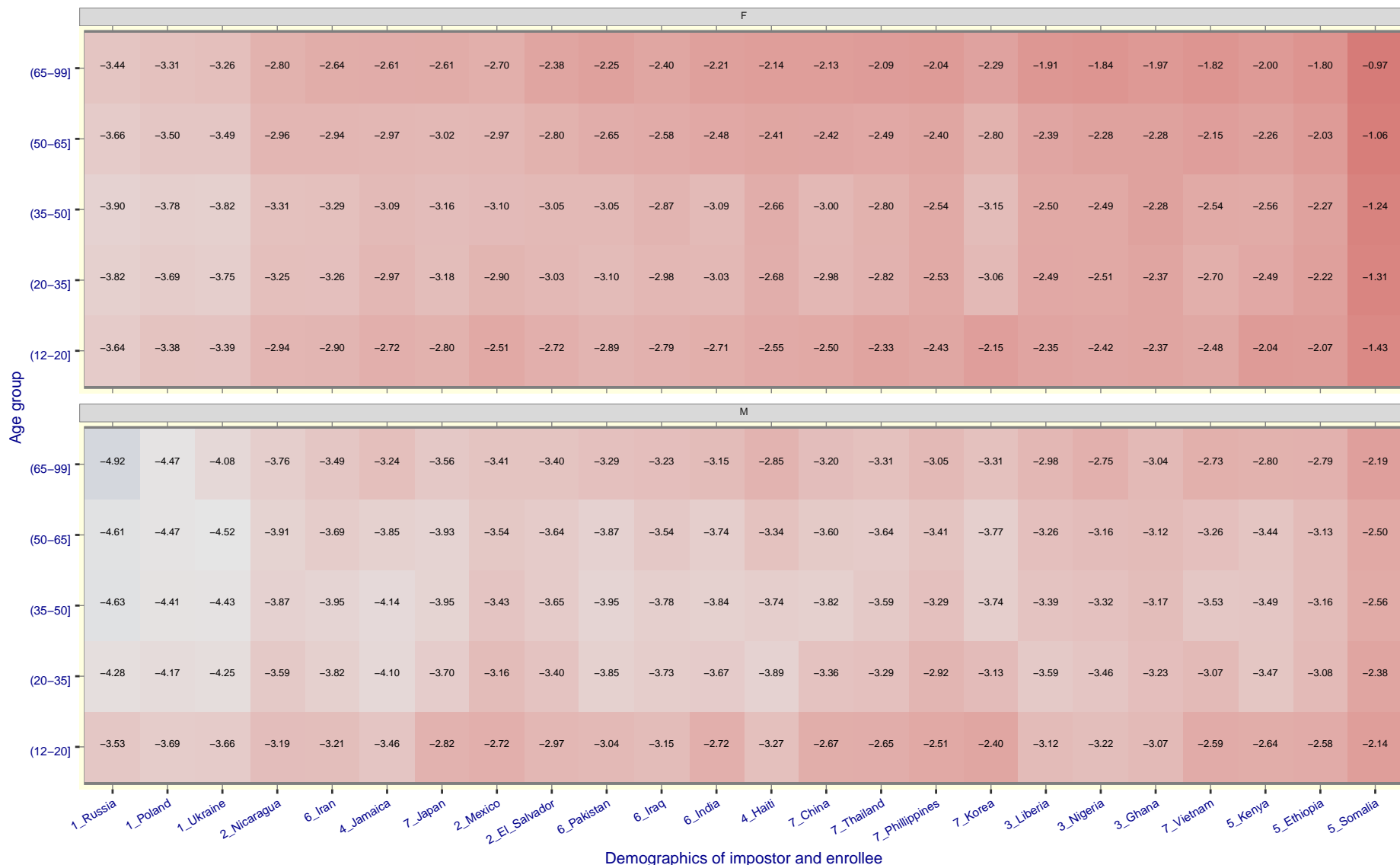
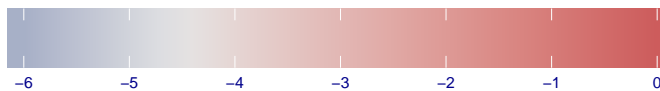
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/dsk\_000.pdf

Algorithm: dsk\_000 Threshold: 1.159994 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/einetworks\_000.pdf

Algorithm: einetworks\_000 Threshold: 54.200231 Dataset: Application Nominal FMR: 0.000030 log10 FMR

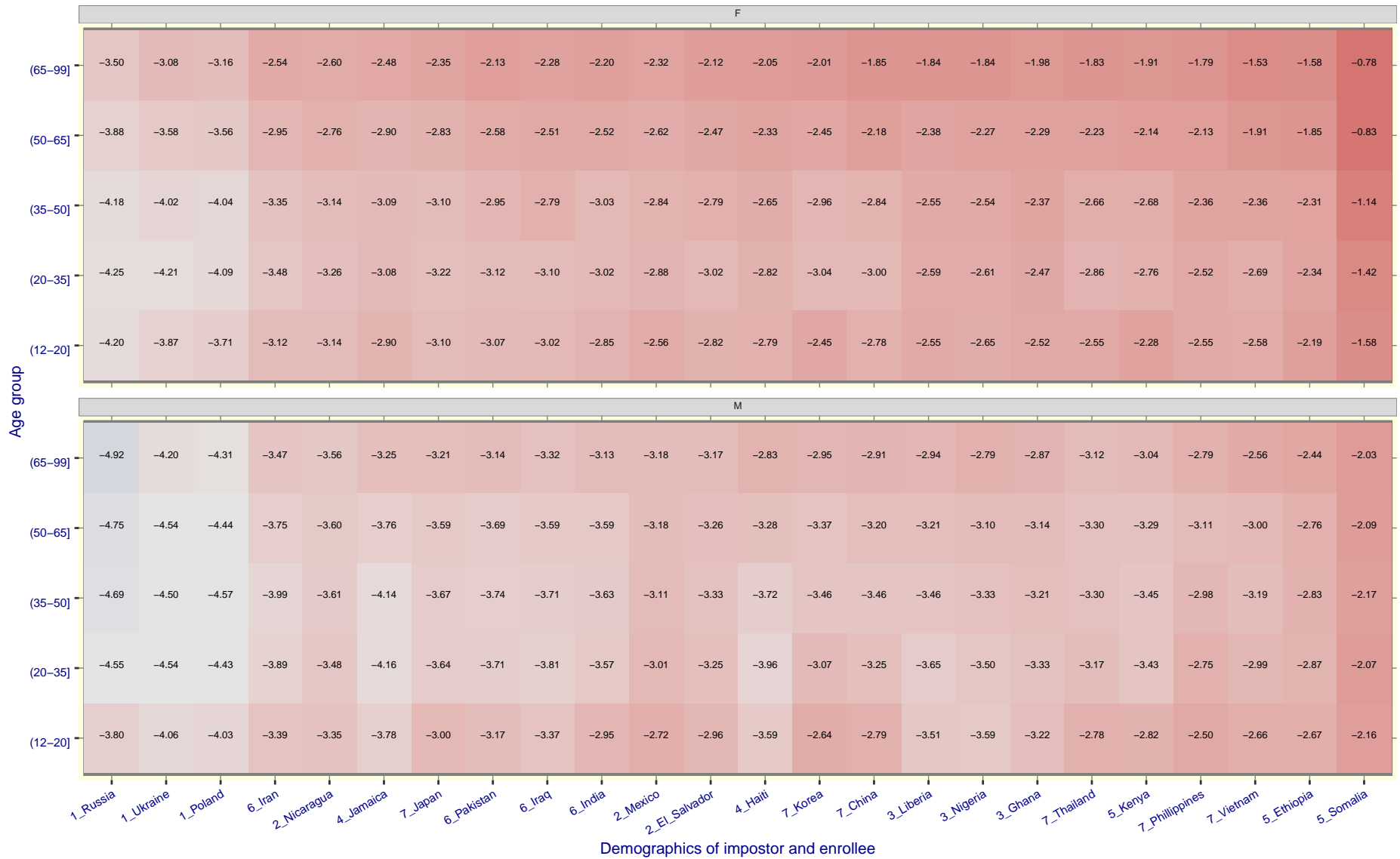


Demographics of impostor and enrollee



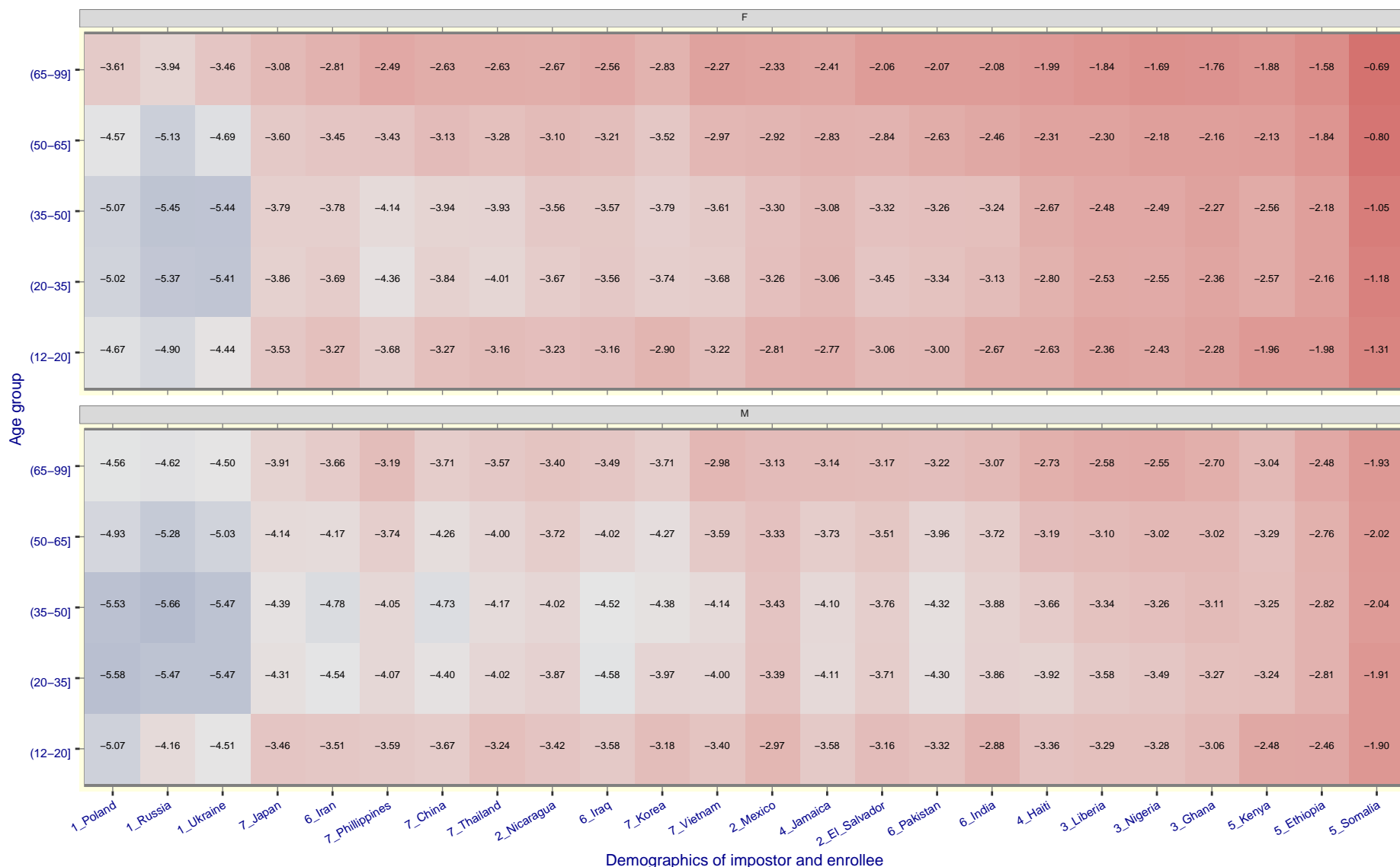
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/everai\_002.pdf

Algorithm: everai\_002 Threshold: 2.66686 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



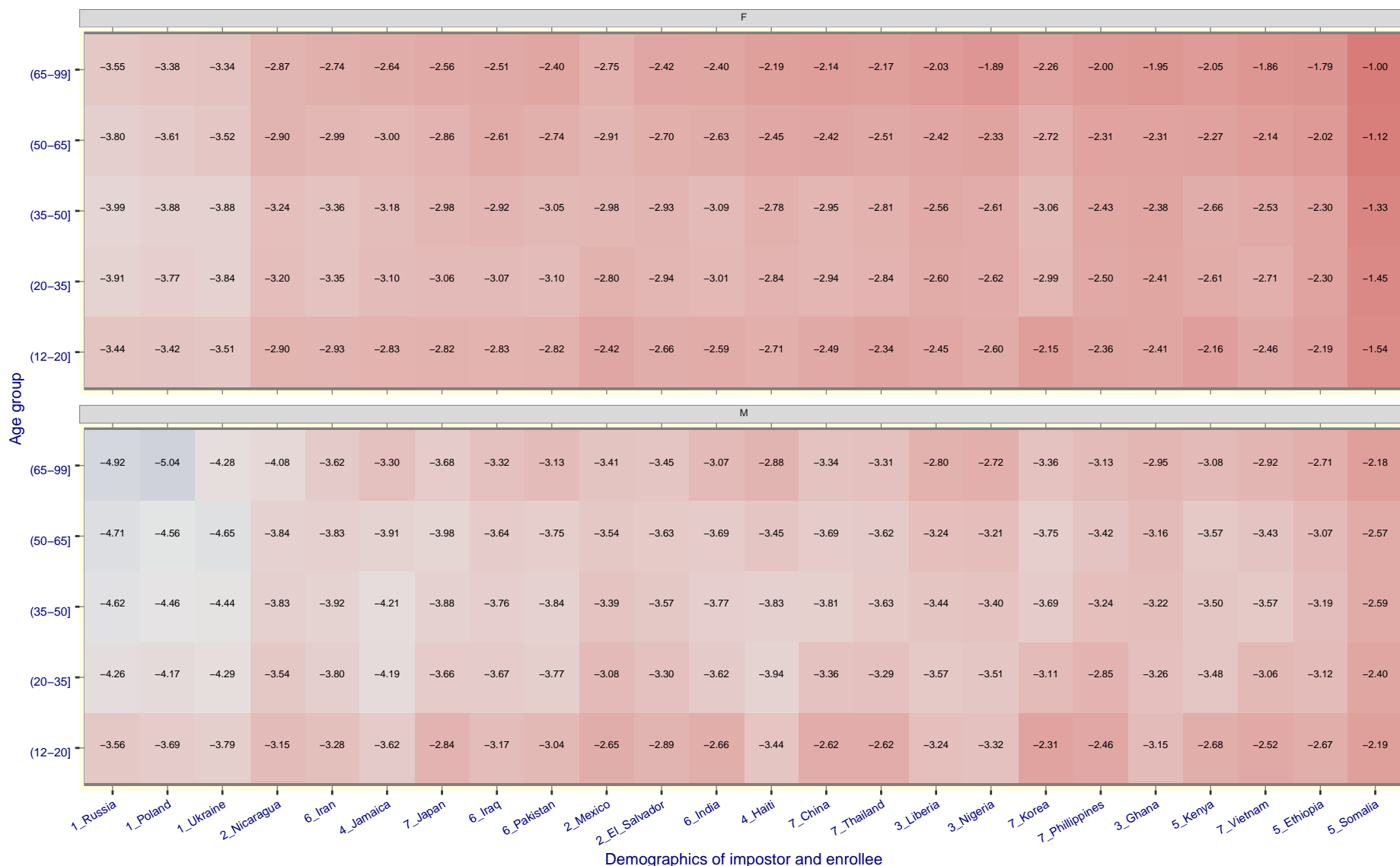
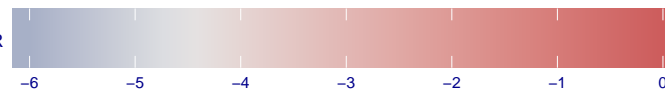
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/everai\_paravision\_003.pdf

Algorithm: everai\_paravision\_003 Threshold: 2.754485 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/f8\_001.pdf

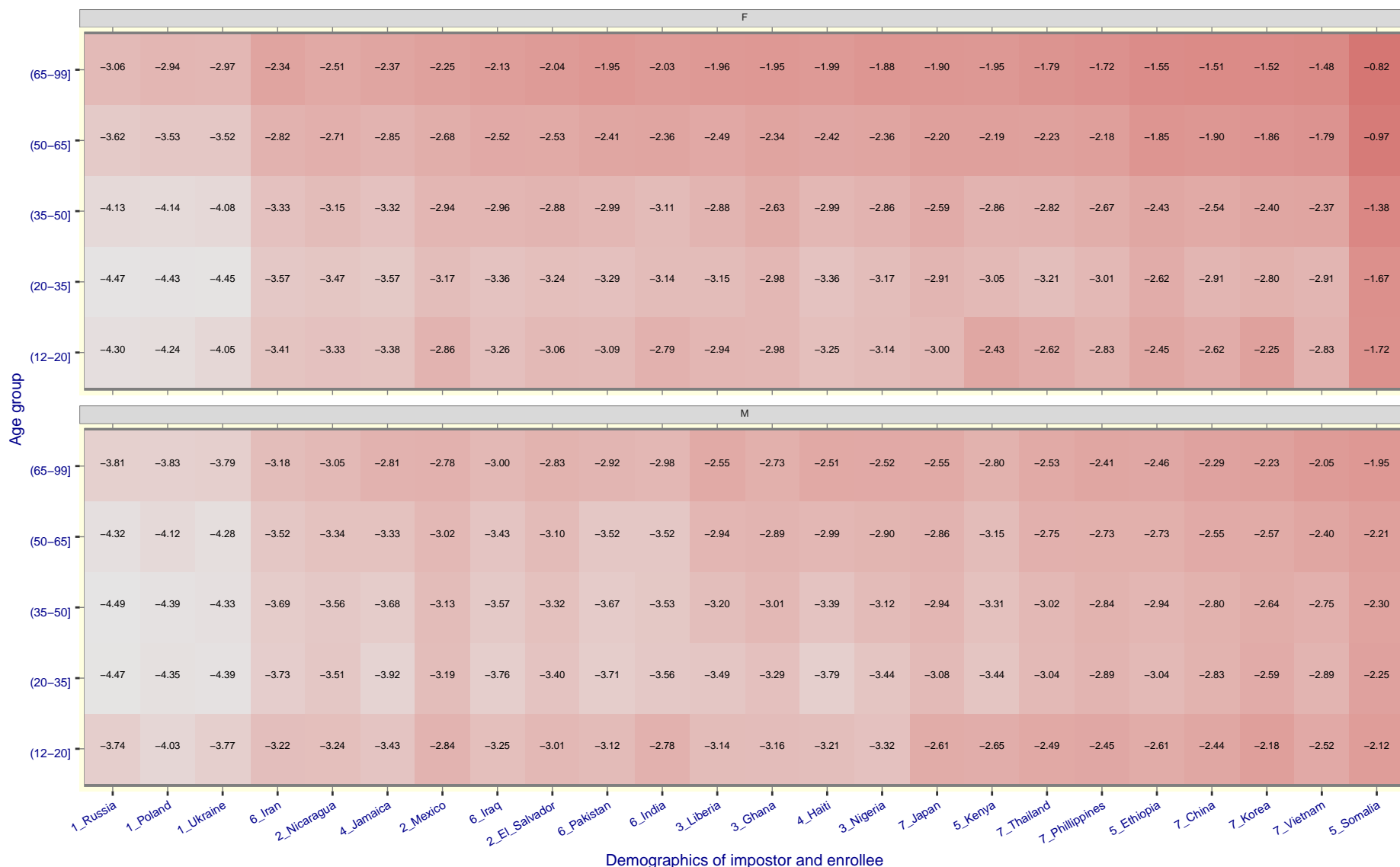
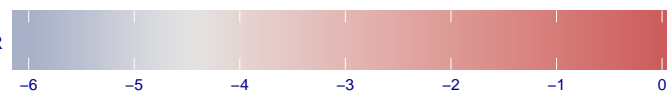
Algorithm: f8\_001 Threshold: 0.422979 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/facesoft\_000.pdf

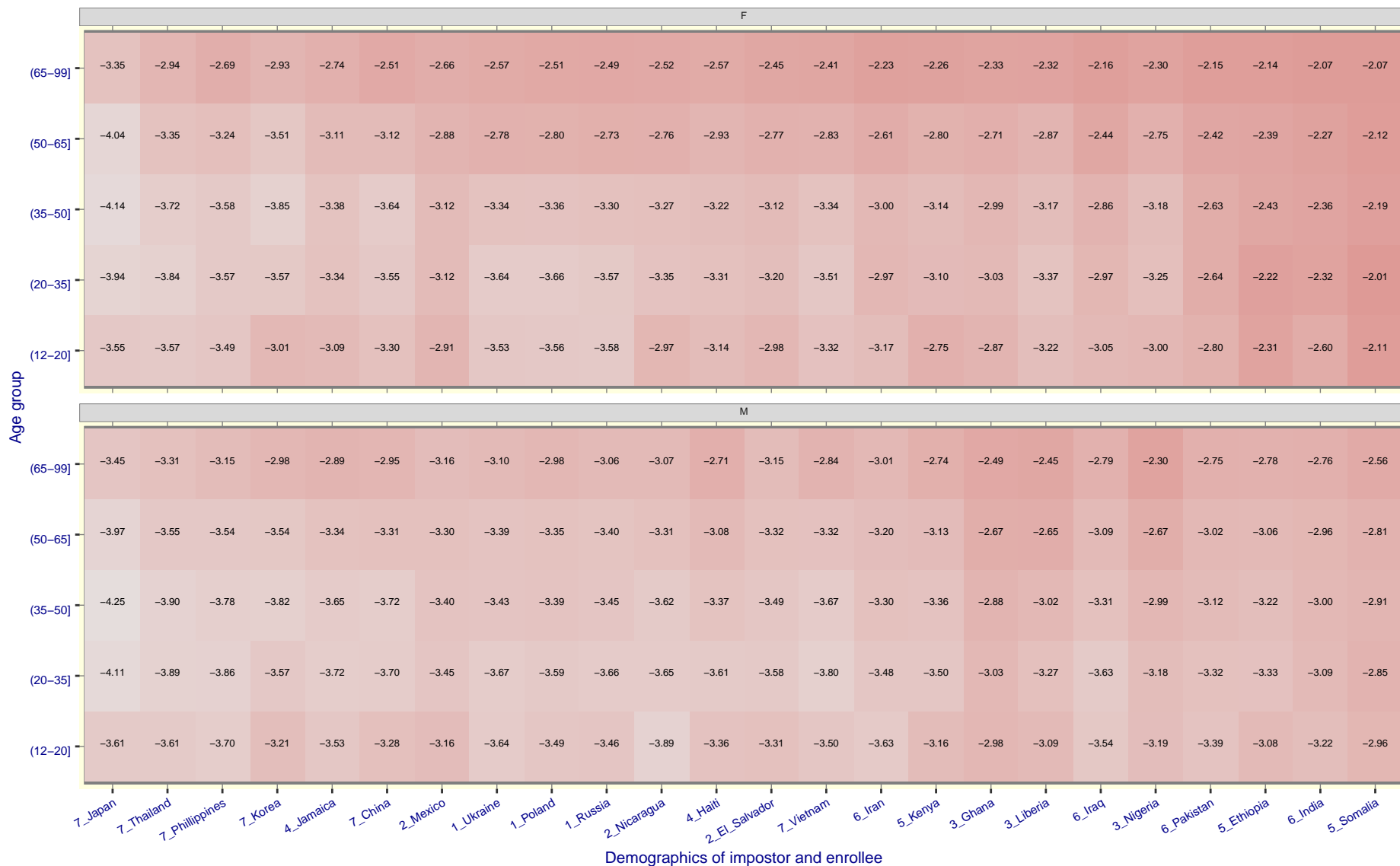
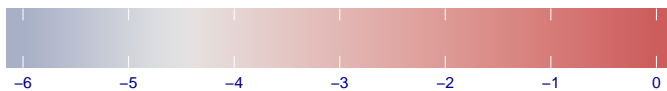
Algorithm: facesoft\_000 Threshold: 1.389900 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



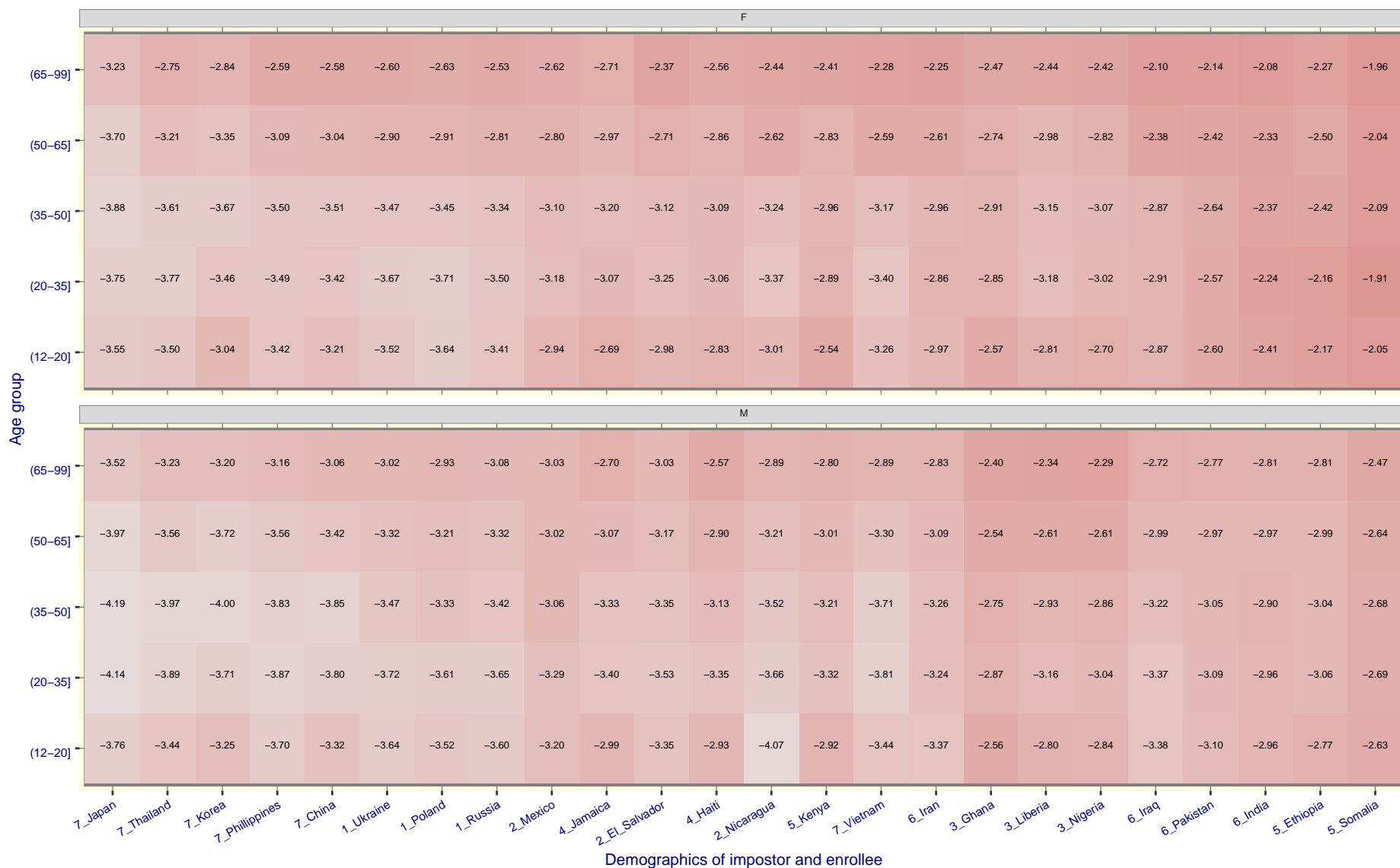
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/glory\_000.pdf

Algorithm: glory\_000 Threshold: 0.615122 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



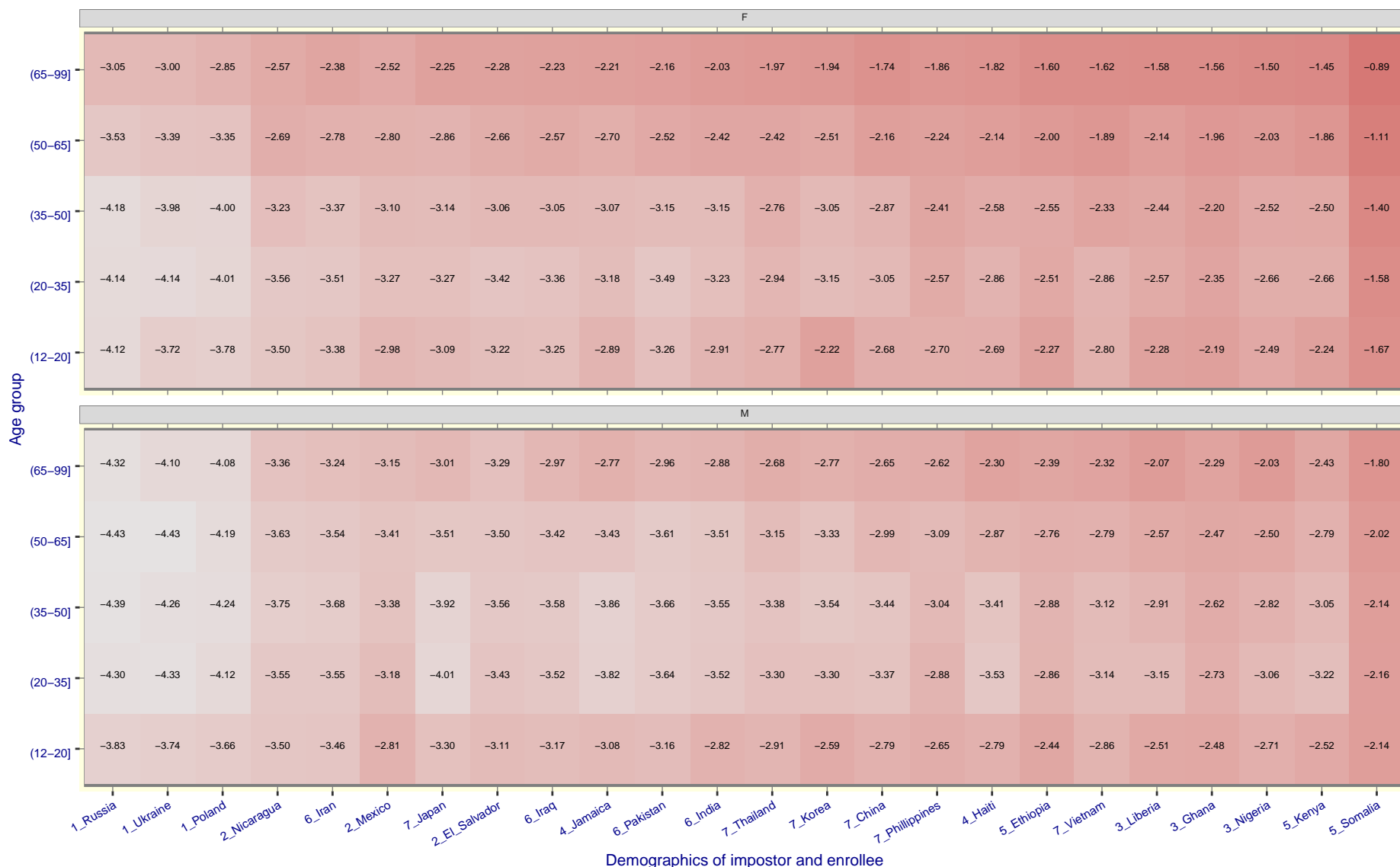
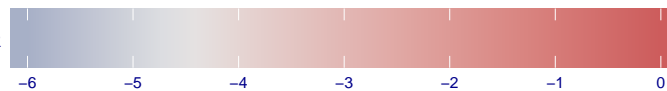
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/glory\_001.pdf

Algorithm: glory\_001 Threshold: 0.621821 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/gorilla\_002.pdf

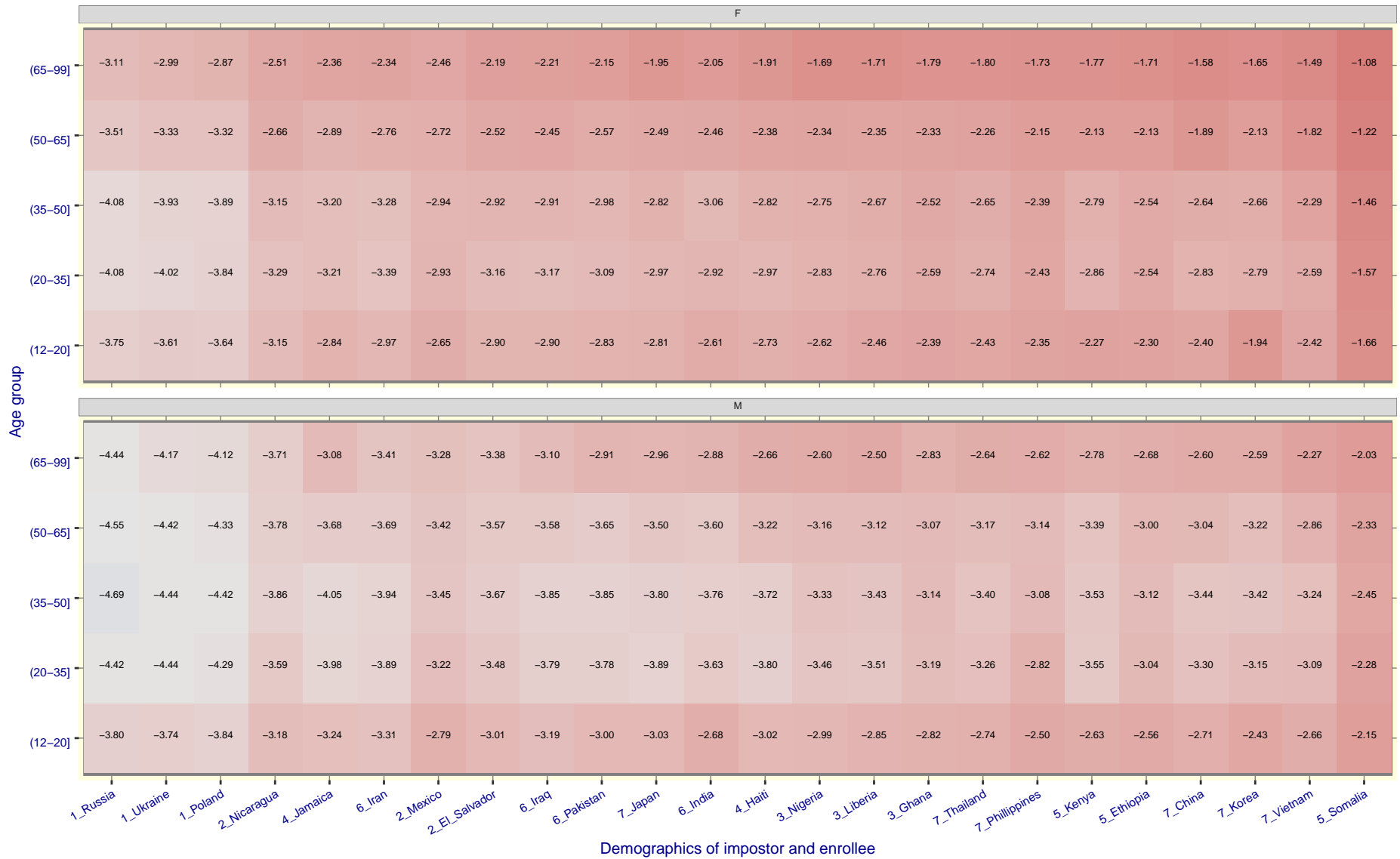
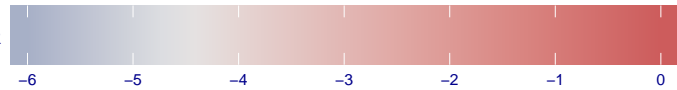
Algorithm: gorilla\_002 Threshold: 0.508320 Dataset: Application Nominal FMR: 0.000030 log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/gorilla\_003.pdf

Algorithm: gorilla\_003 Threshold: 0.477970 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

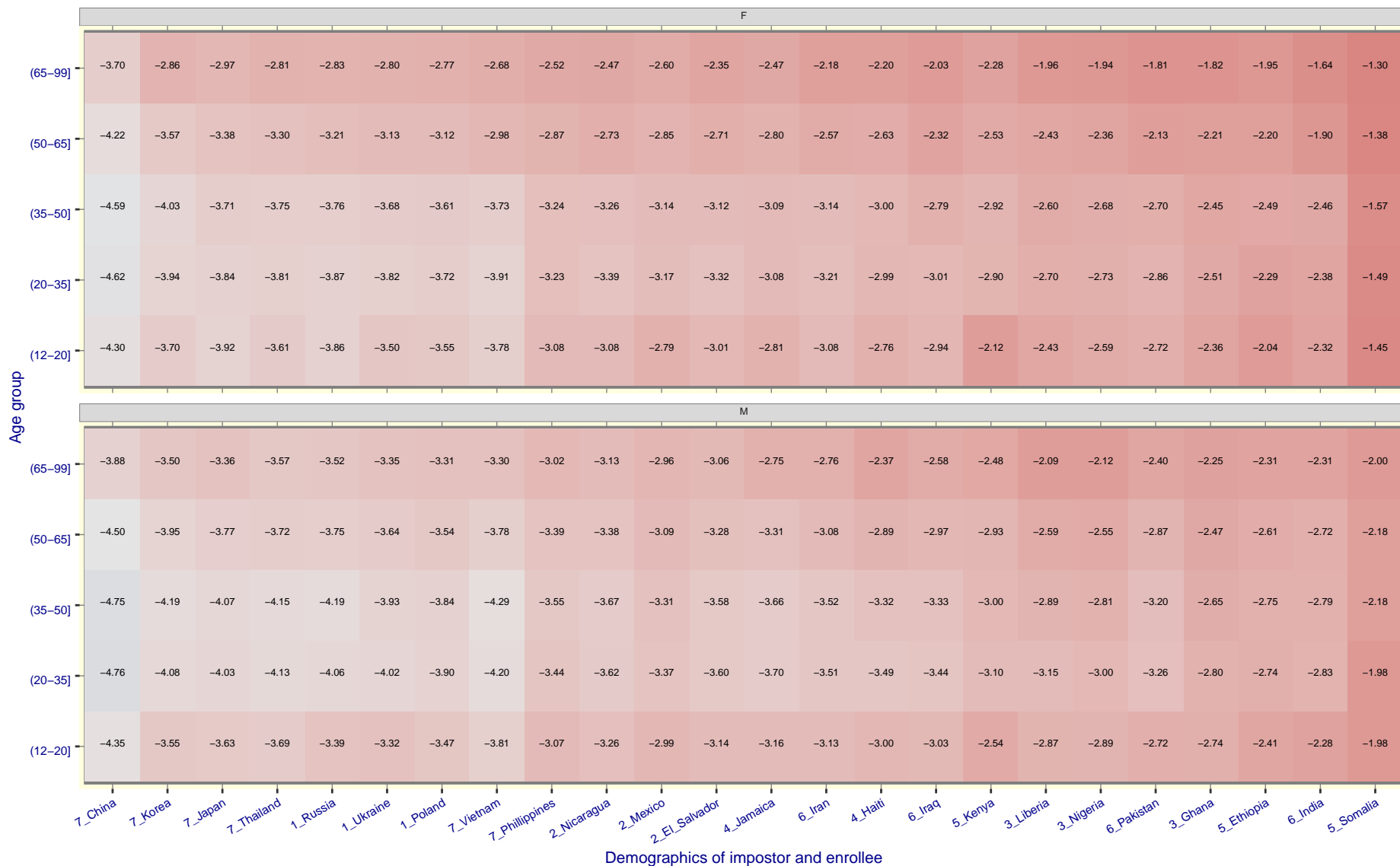
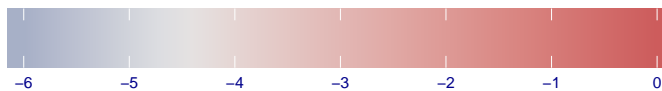


Demographics of impostor and enrollee



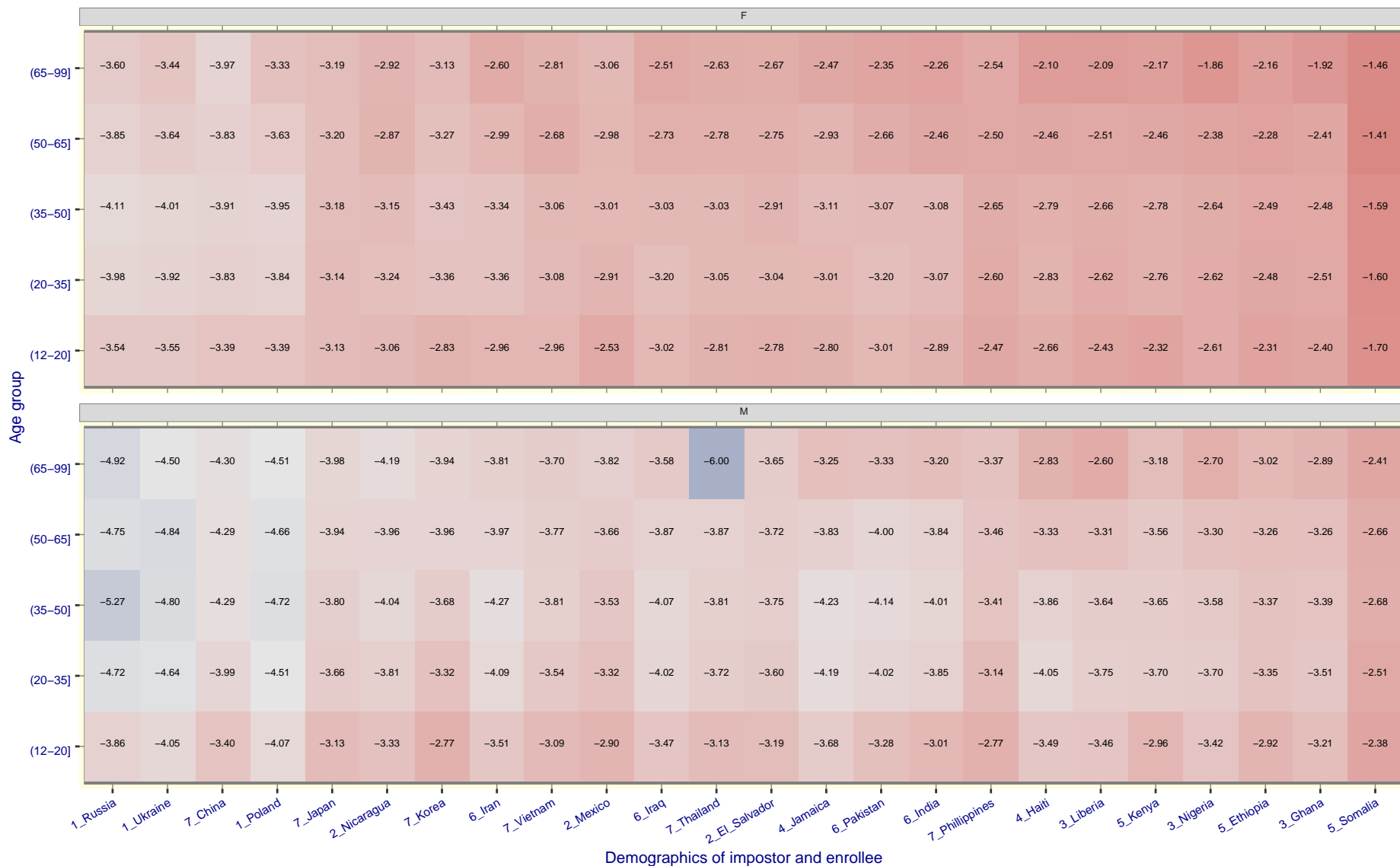
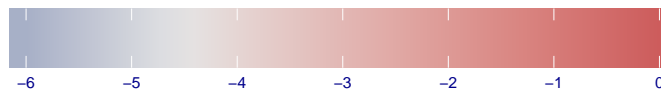
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/hik\_001.pdf

Algorithm: hik\_001 Threshold: 67.854788 Dataset: Application Nominal FMR: 0.000030 log10 FMR



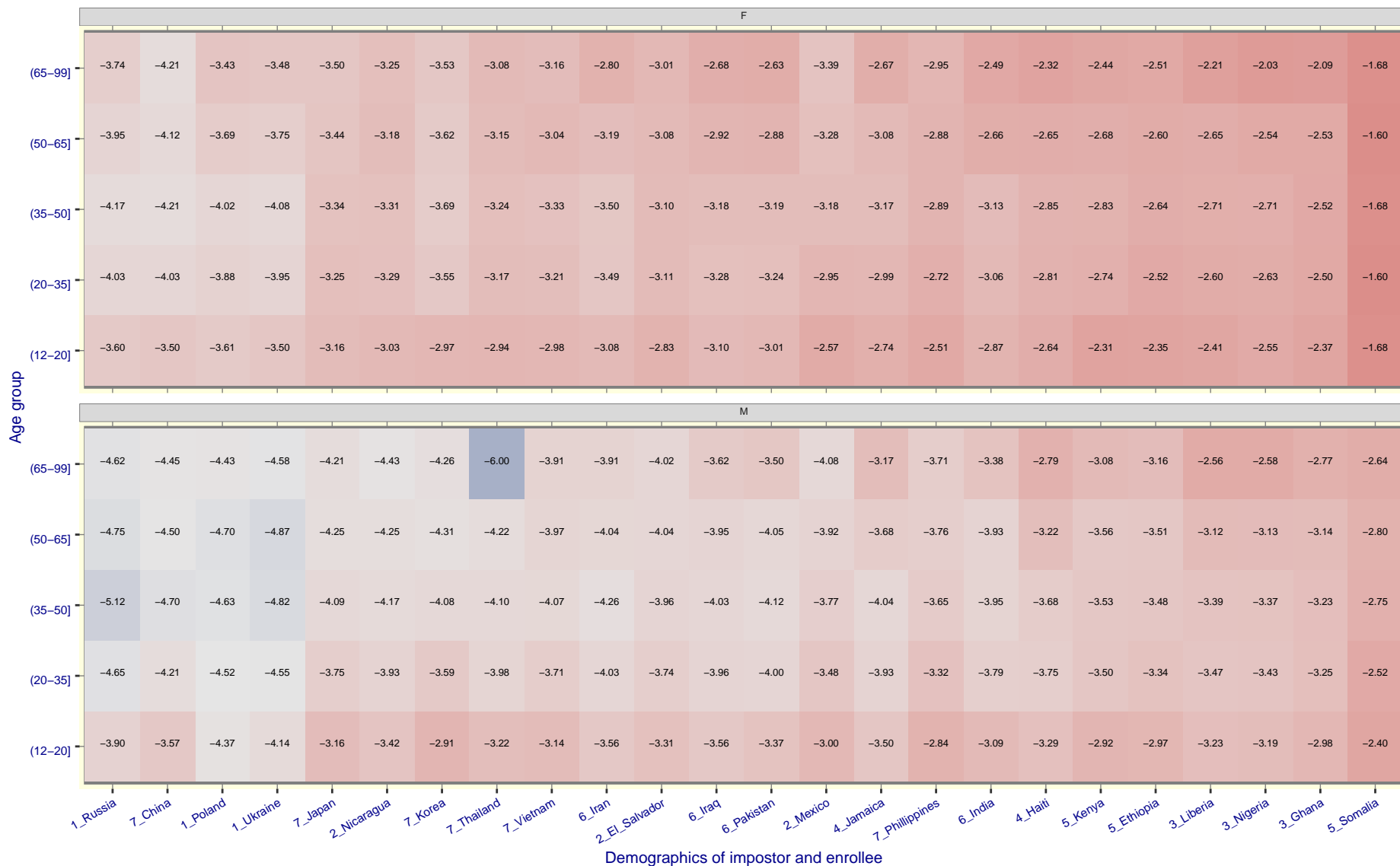
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/hr\_001.pdf

Algorithm: hr\_001 Threshold: 0.864147 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/hr\_002.pdf

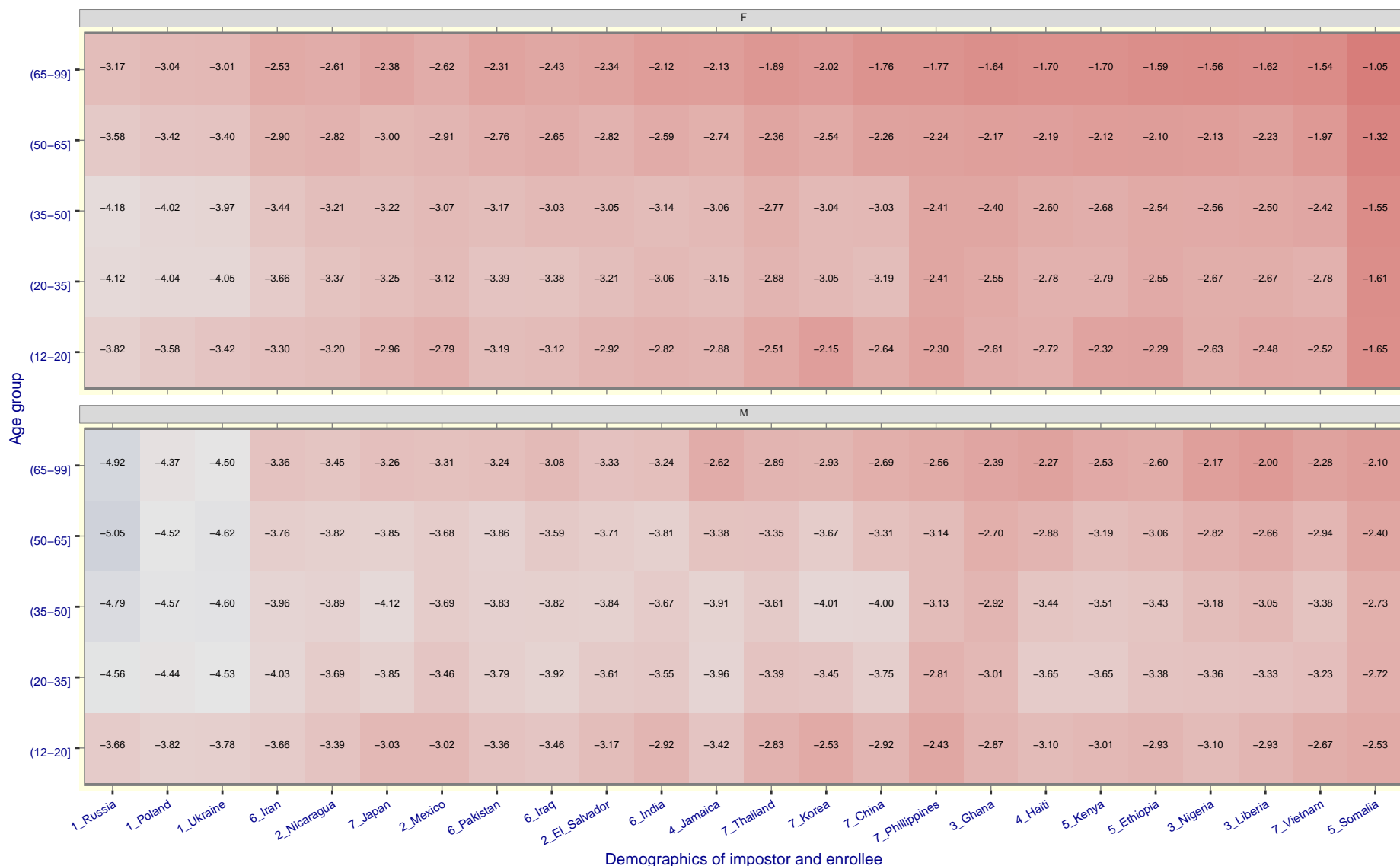
Algorithm: hr\_002 Threshold: 0.476614 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/id3\_003.pdf

Algorithm: id3\_003 Threshold: 37637.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

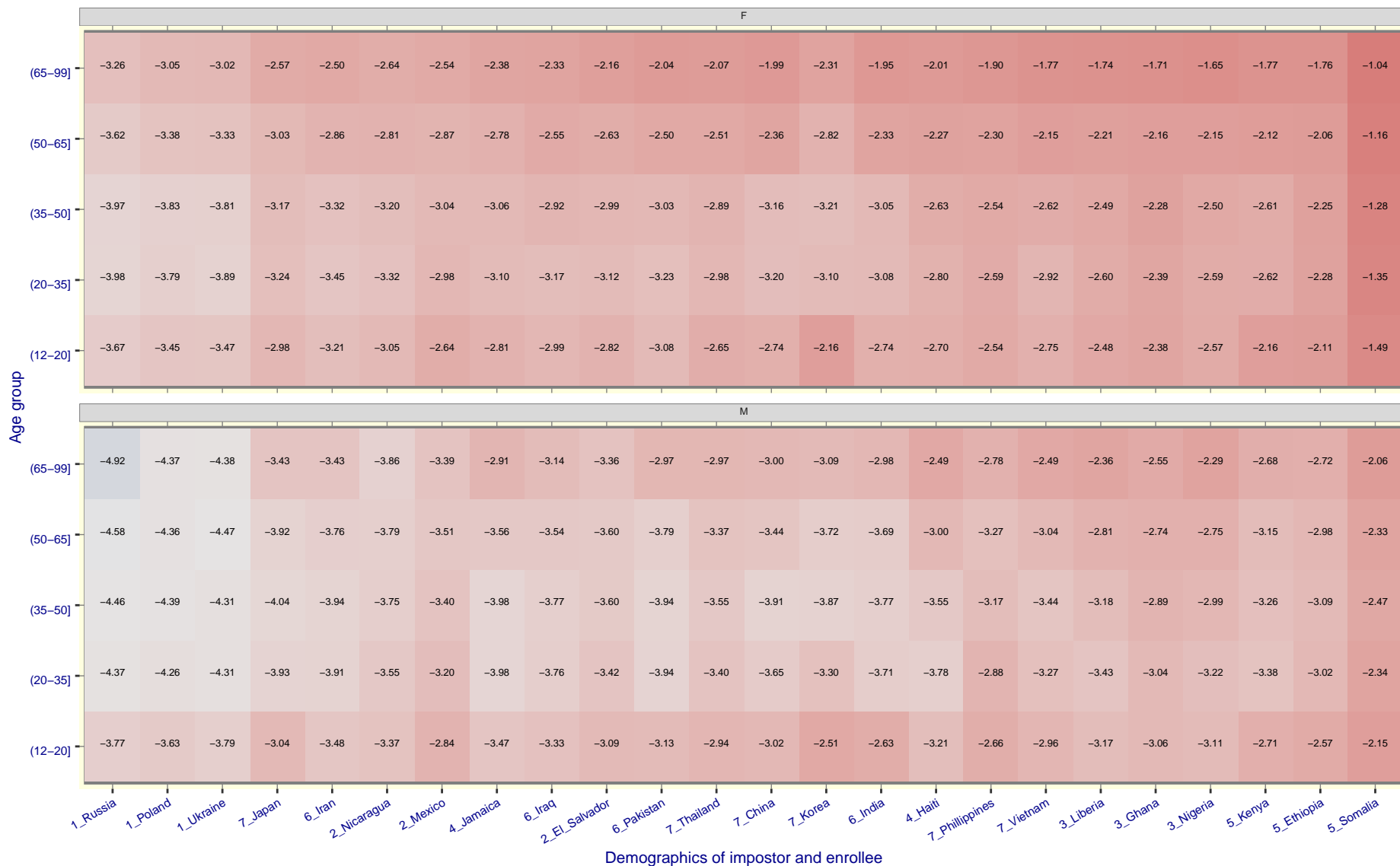
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/id3\_004.pdf

Algorithm: id3\_004 Threshold: 37227.000000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

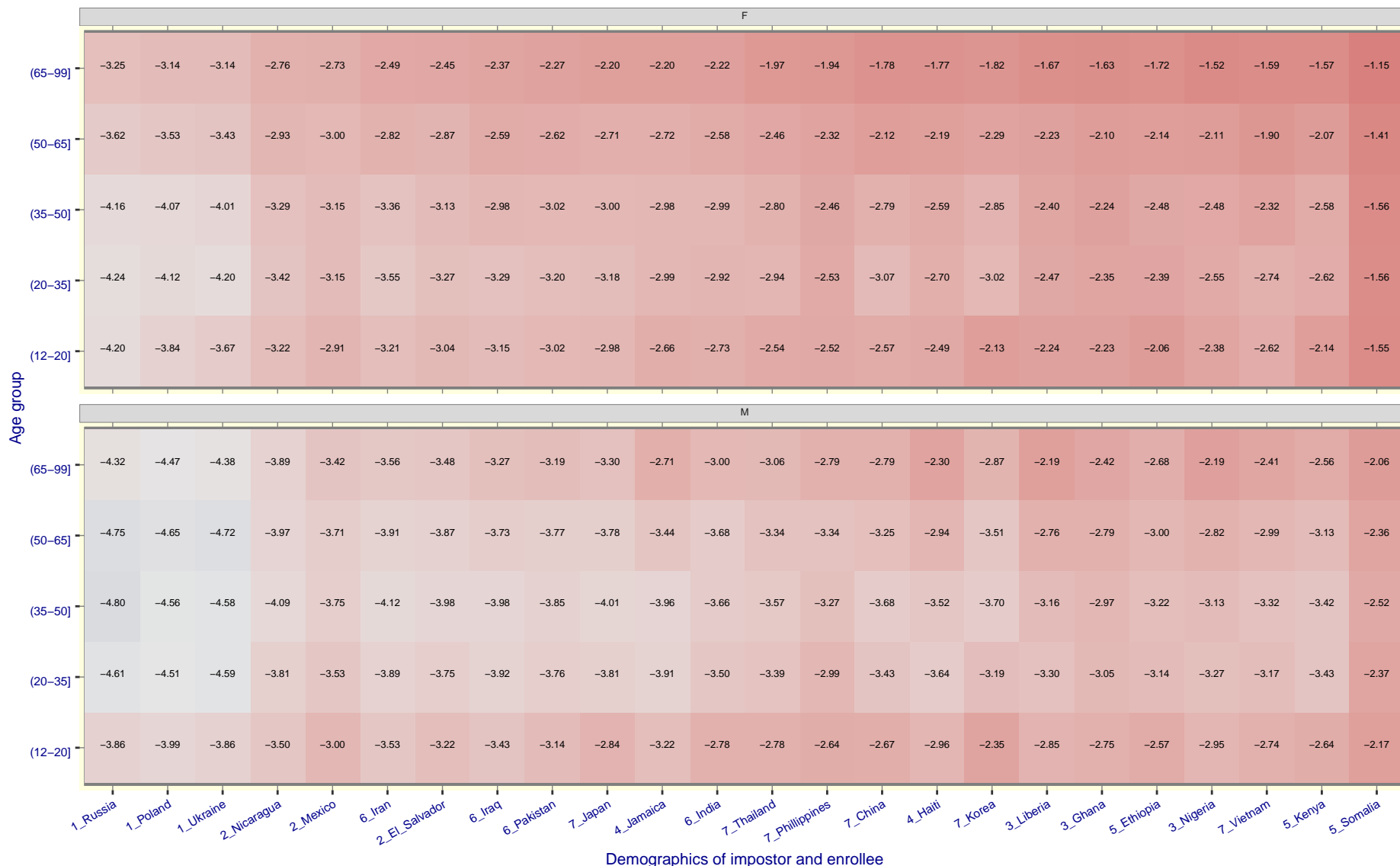
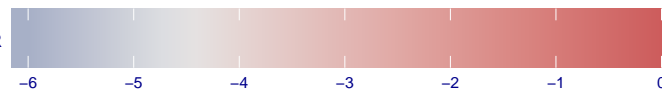
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/idemia\_004.pdf

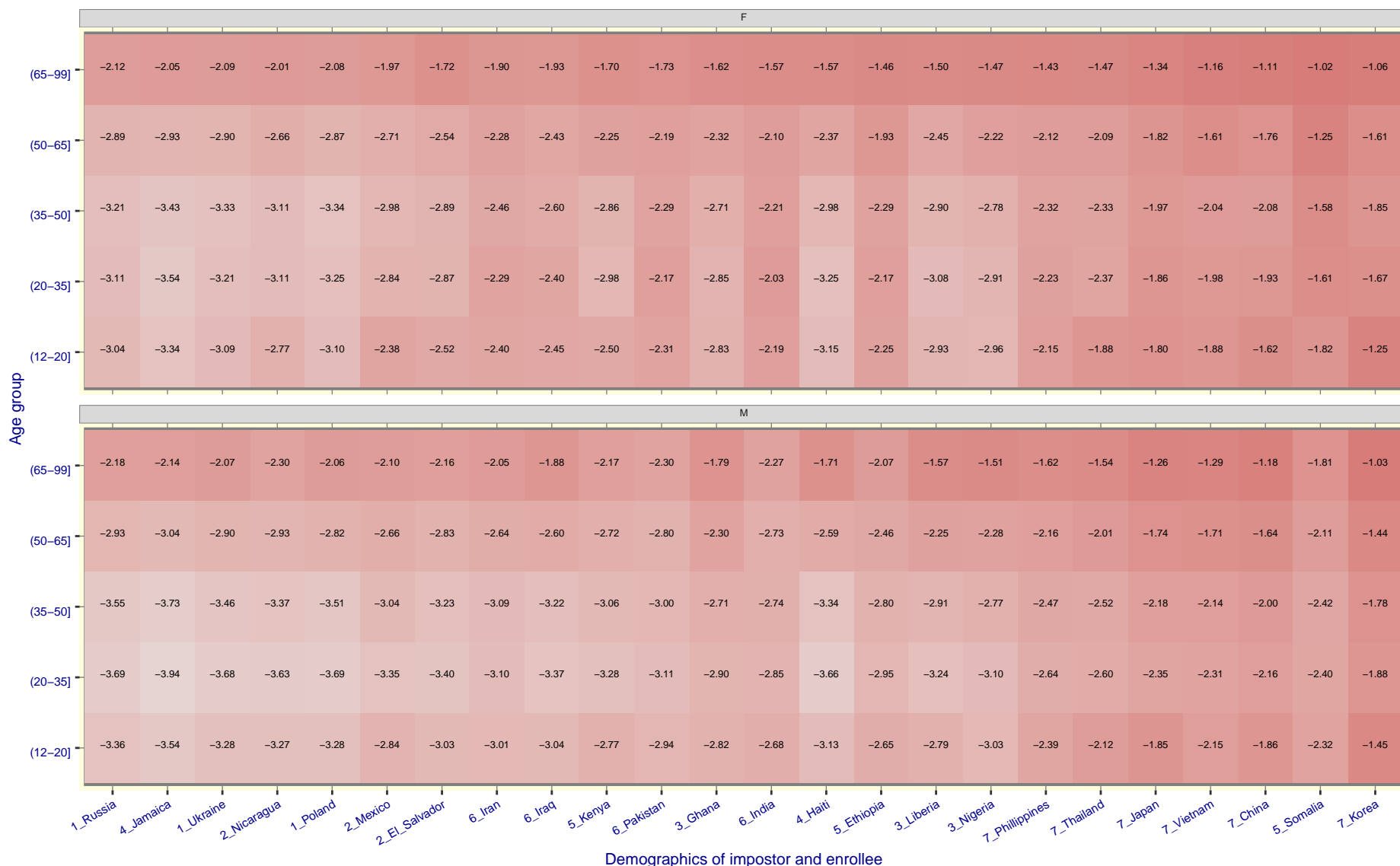
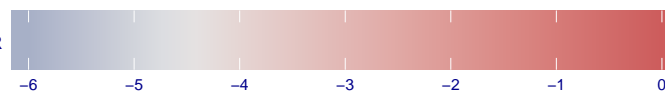
Algorithm: idemia\_004 Threshold: 4132.303852 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



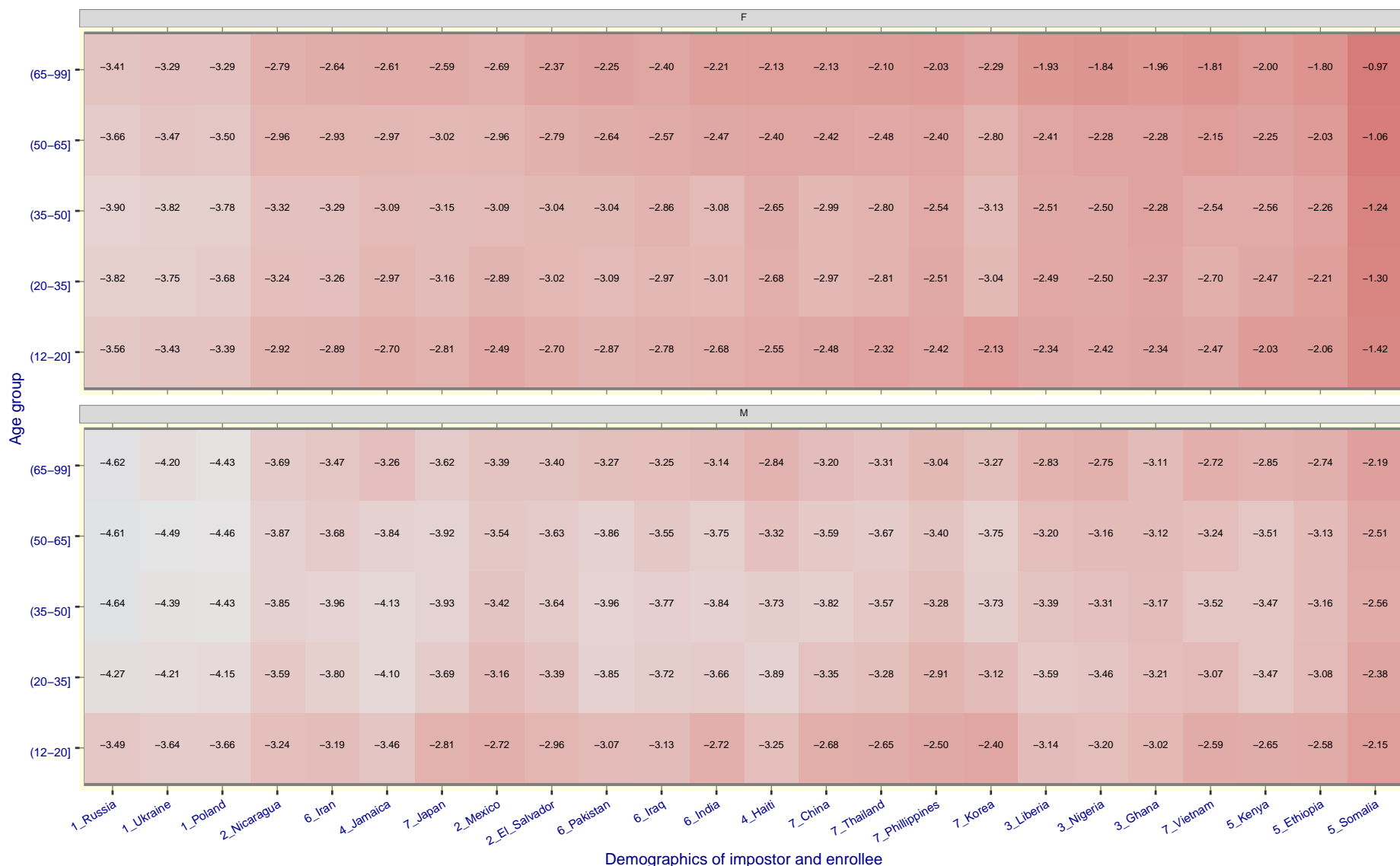
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/iit\_000.pdf

Algorithm: iit\_000 Threshold: 0.735303 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/iit\_001.pdf

Algorithm: iit\_001 Threshold: 0.699192 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



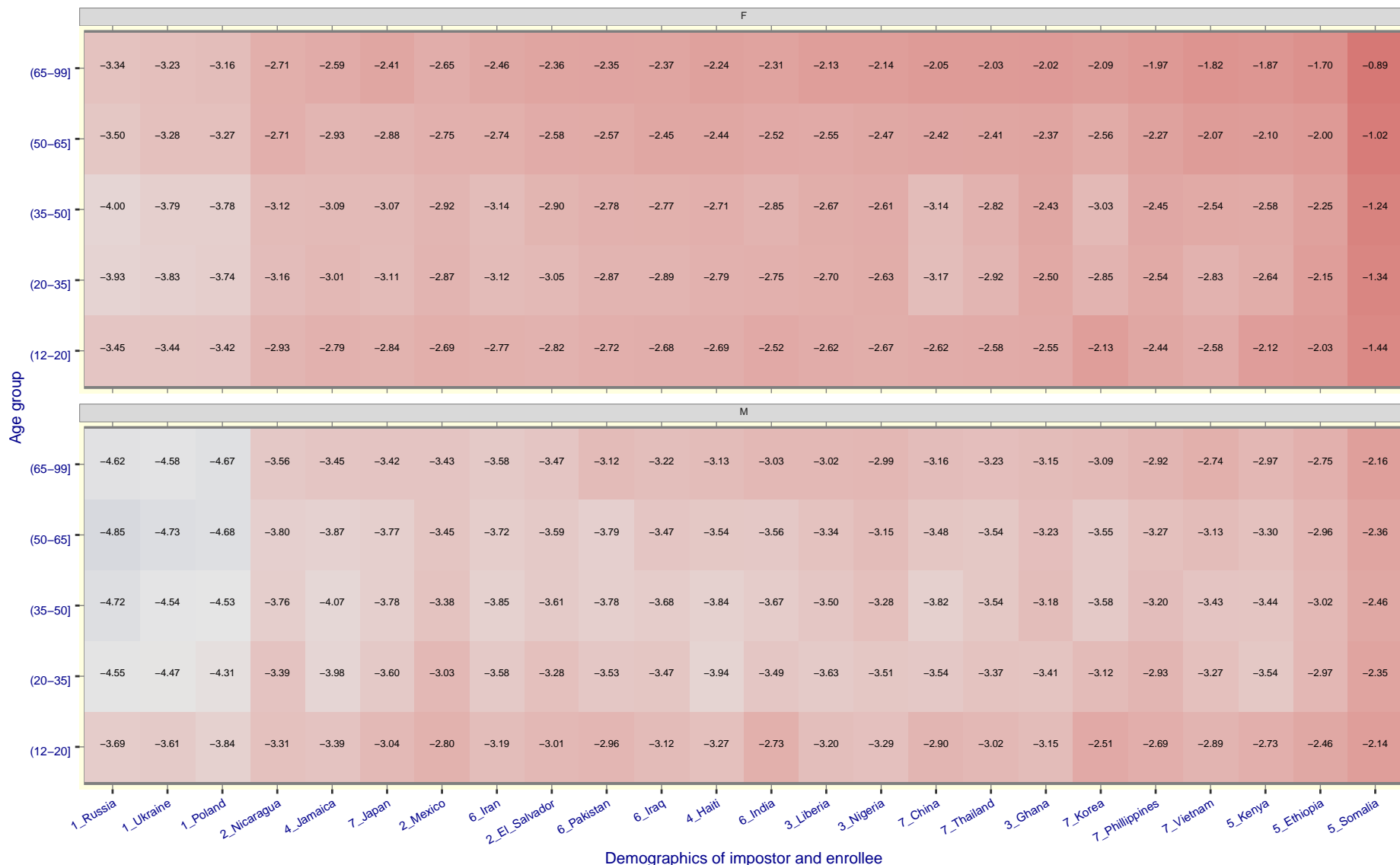
Demographics of impostor and enrollee



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/imagus\_000.pdf

Algorithm: imagus\_000 Threshold: 0.958501 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

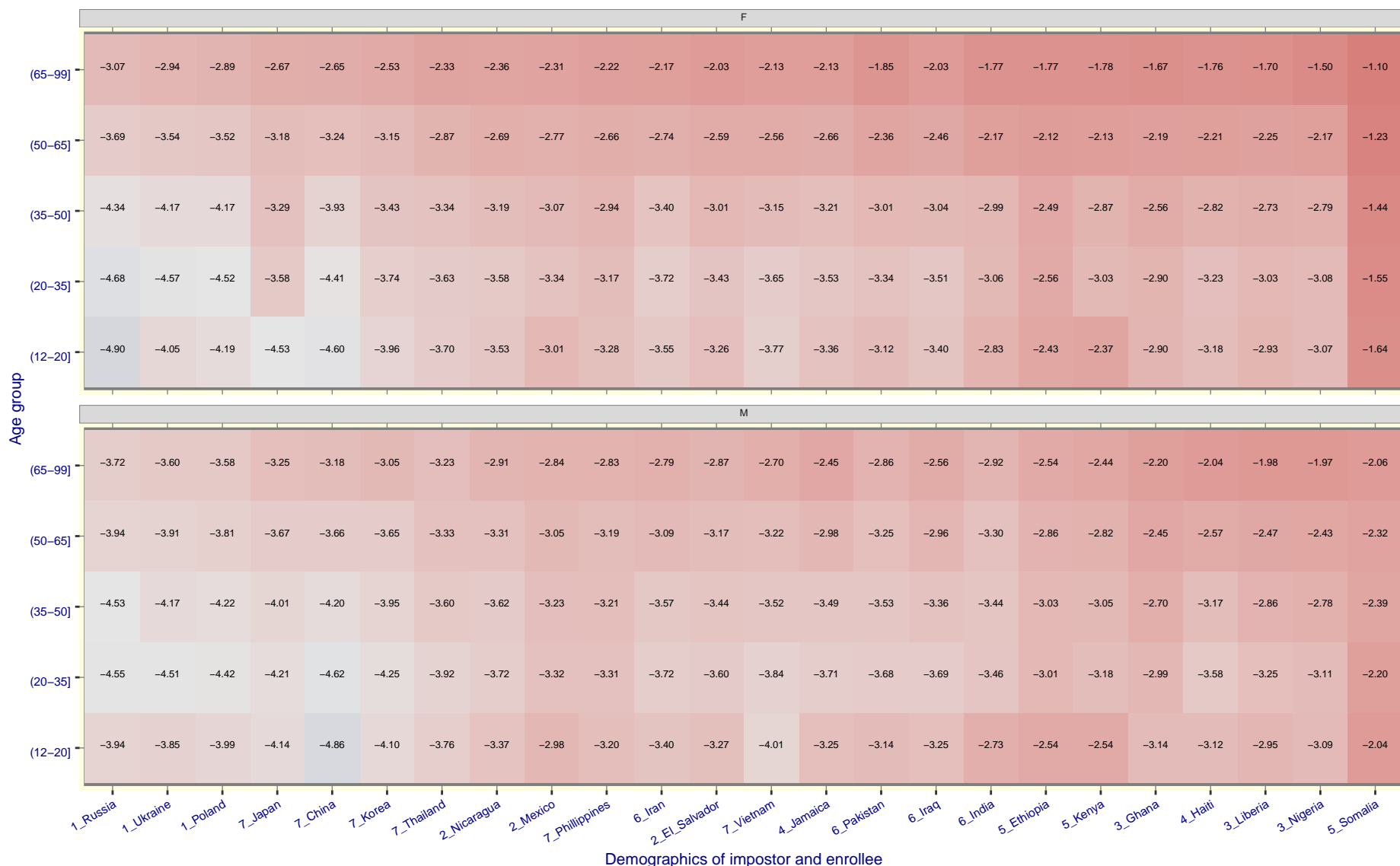
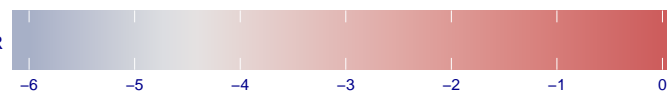


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/imperial\_000.pdf

Algorithm: imperial\_000 Threshold: 1.410077 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

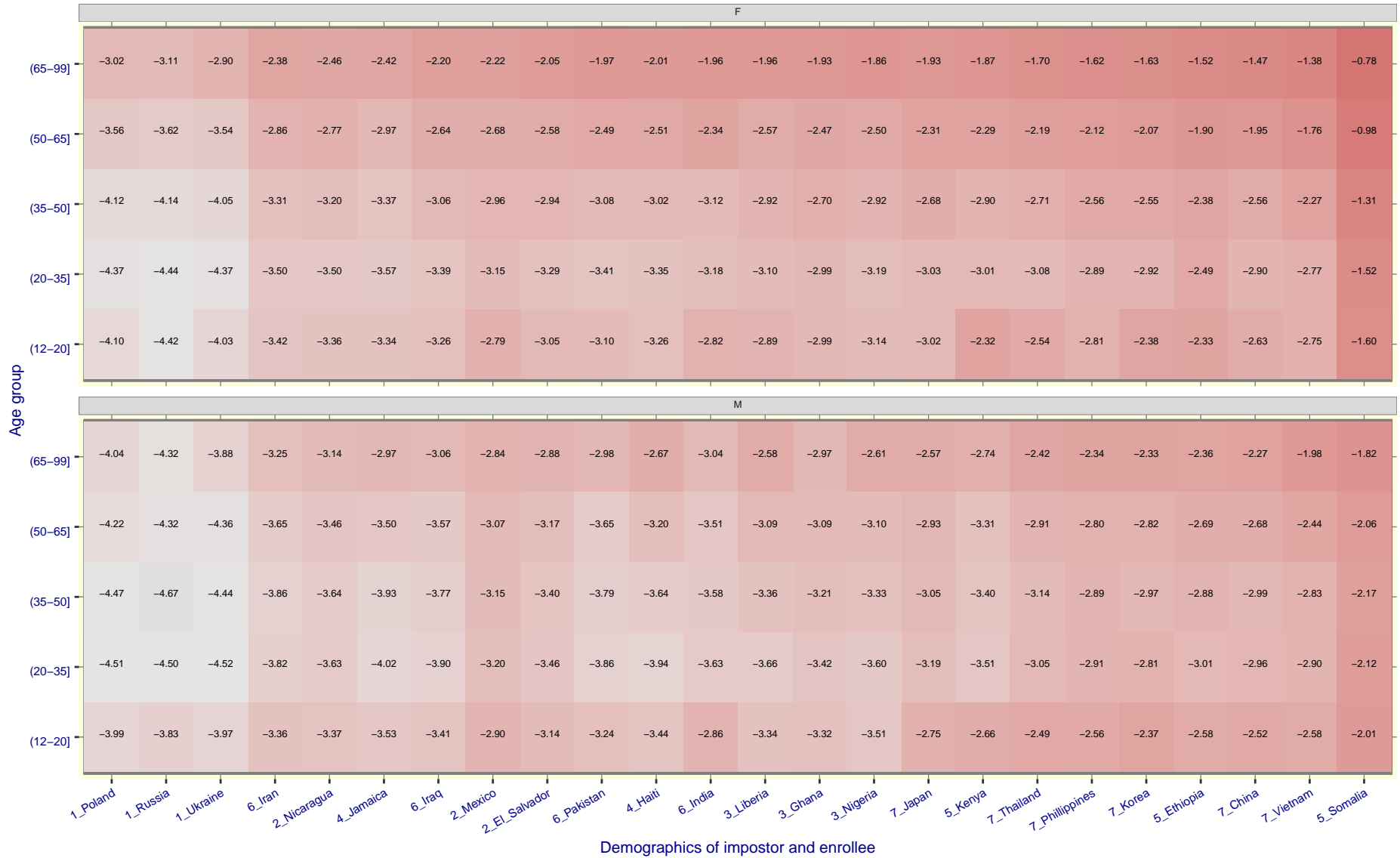
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/imperial\_002.pdf

Algorithm: imperial\_002 Threshold: 1.381120 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

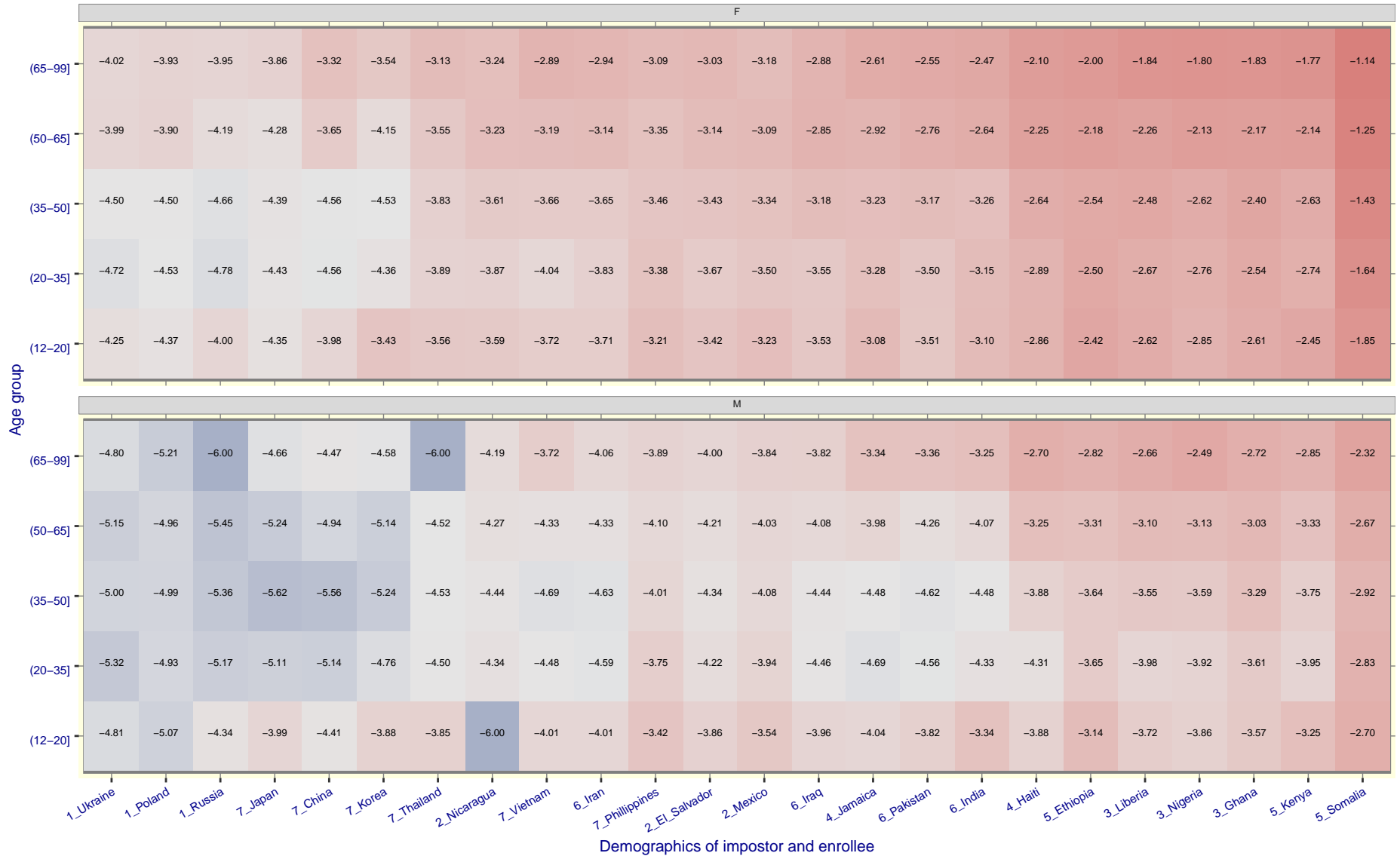


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/incode\_003.pdf

Algorithm: incode\_003 Threshold: 1.501853 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

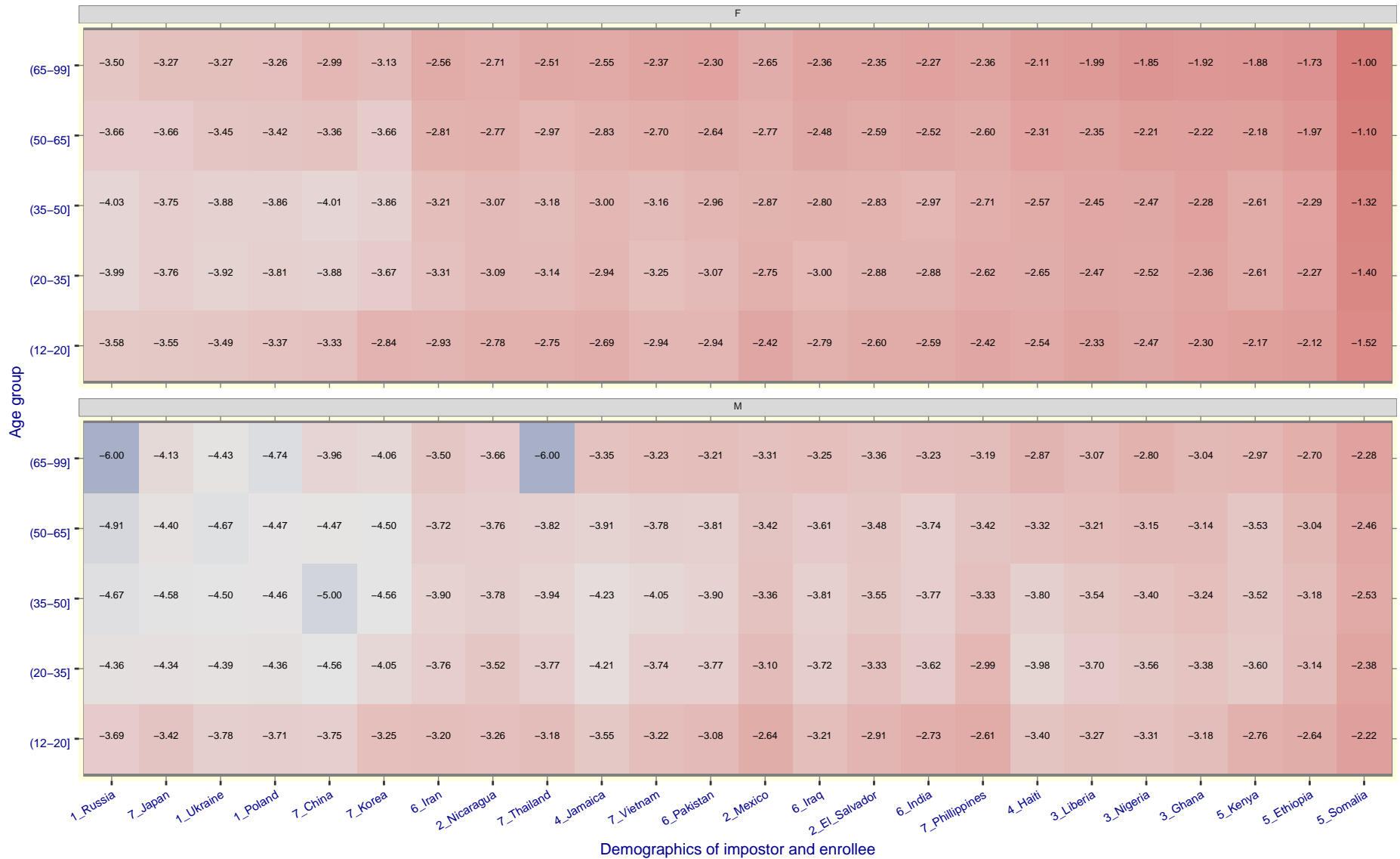
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/incode\_004.pdf

Algorithm: incode\_004 Threshold: 1.434743 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

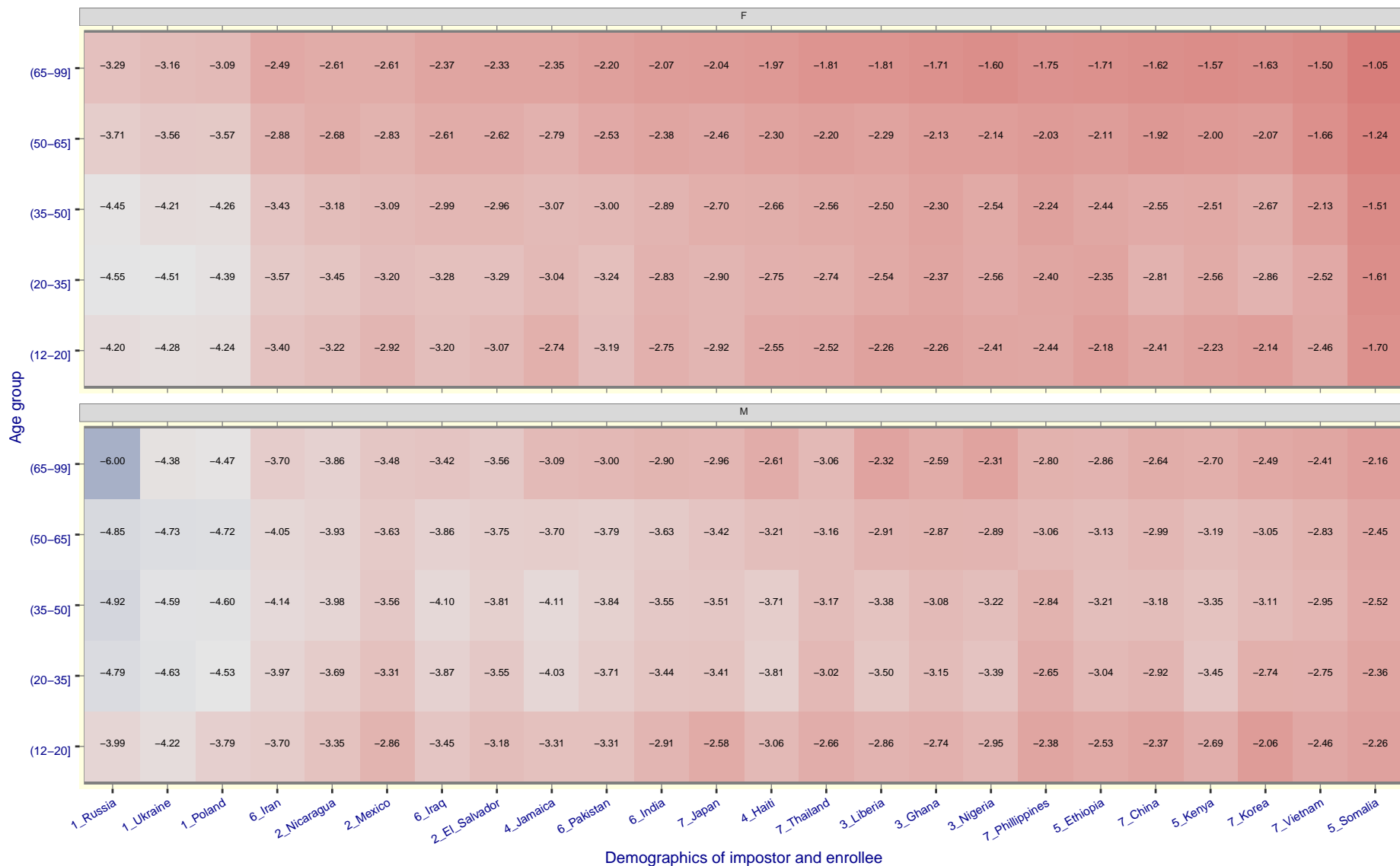
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/innovatrics\_004.pdf

Algorithm: innovatrics\_004 Threshold: 32.545400 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

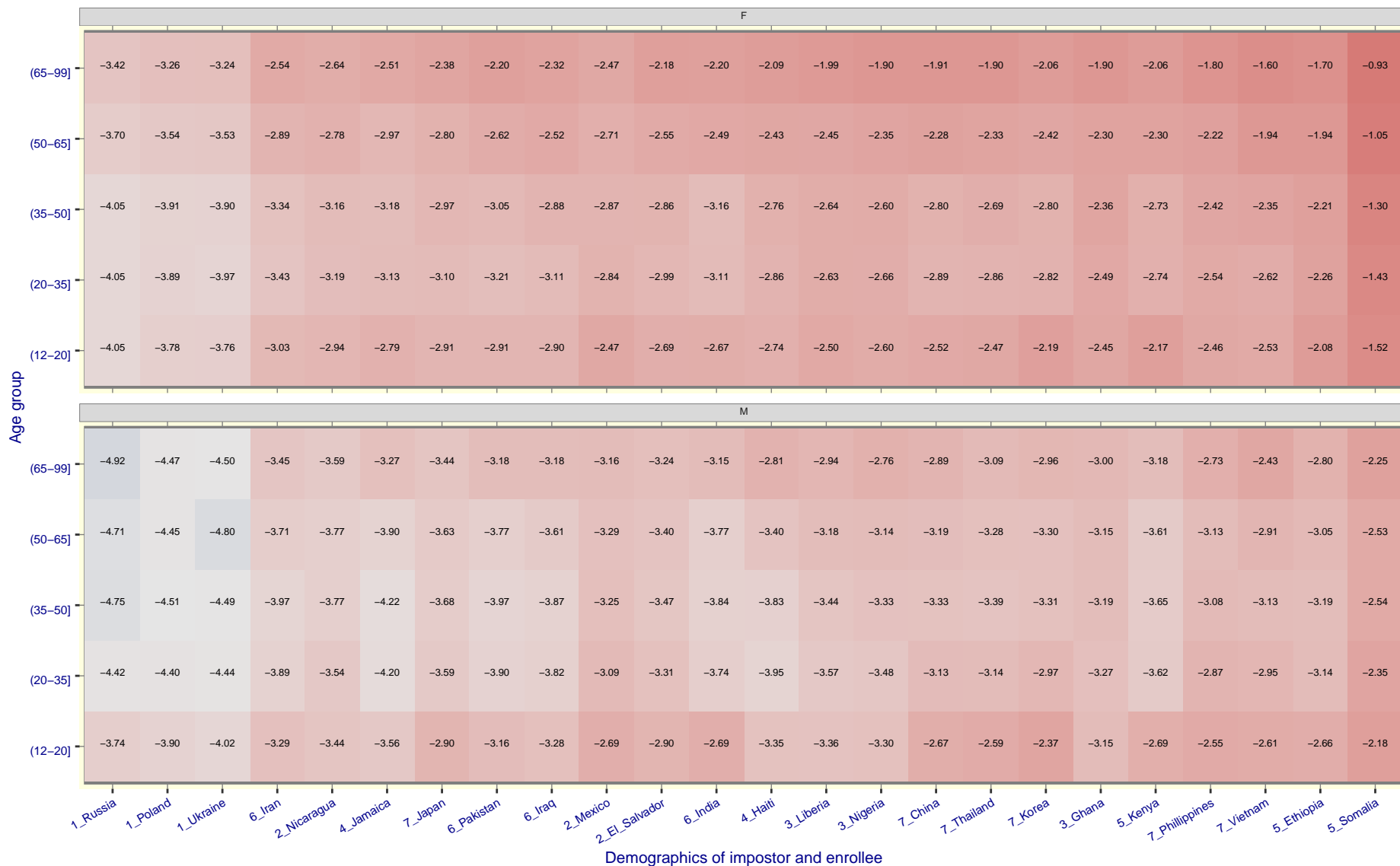
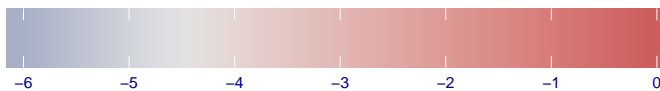
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/innovatrics\_006.pdf

Algorithm: innovatrics\_006 Threshold: 31.670000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

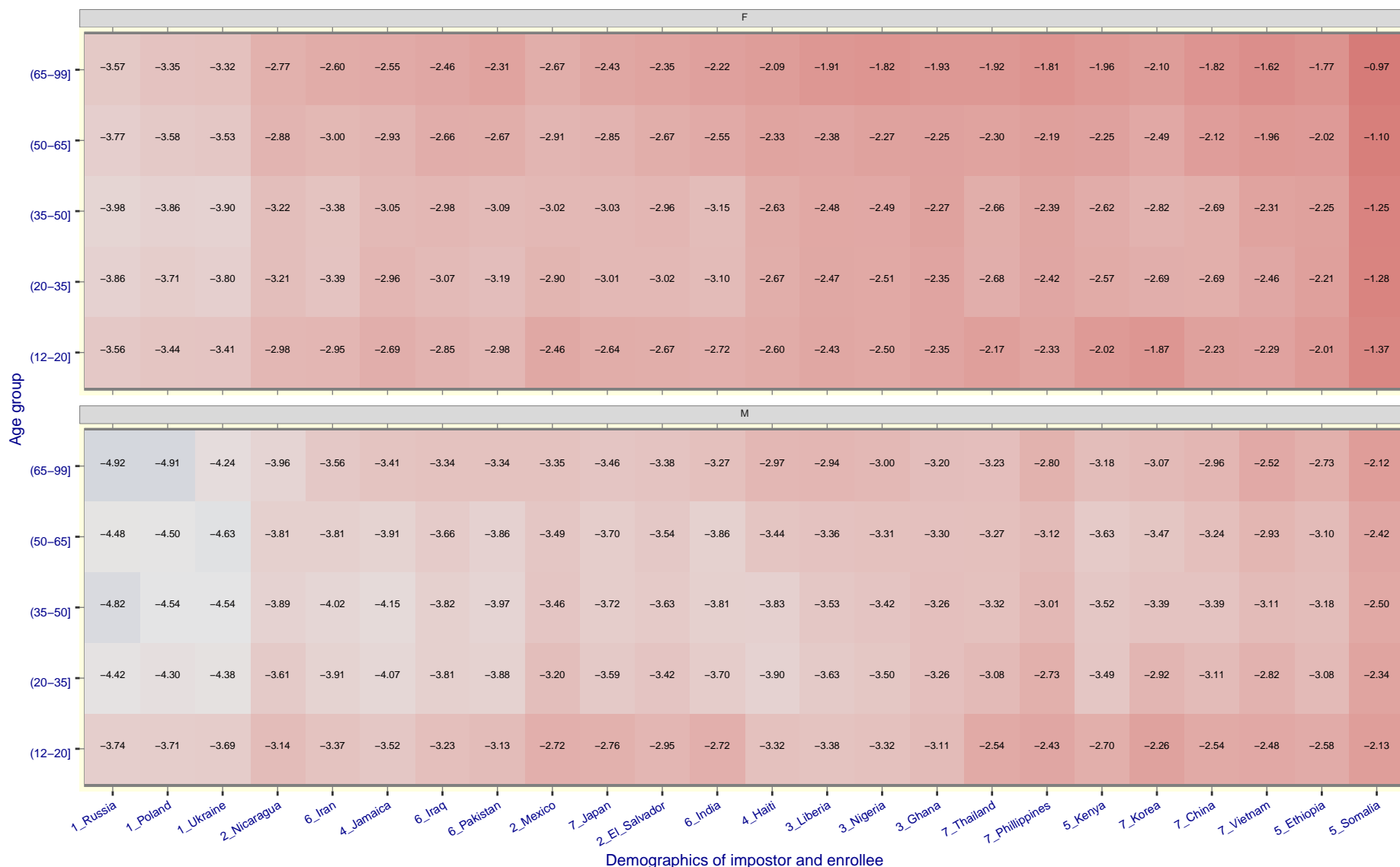
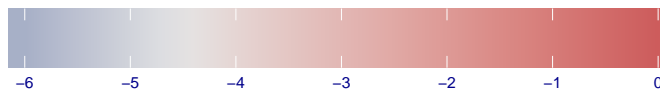
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/intellicloudai\_001.pdf

Algorithm: intellicloudai\_001 Threshold: 0.712582 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

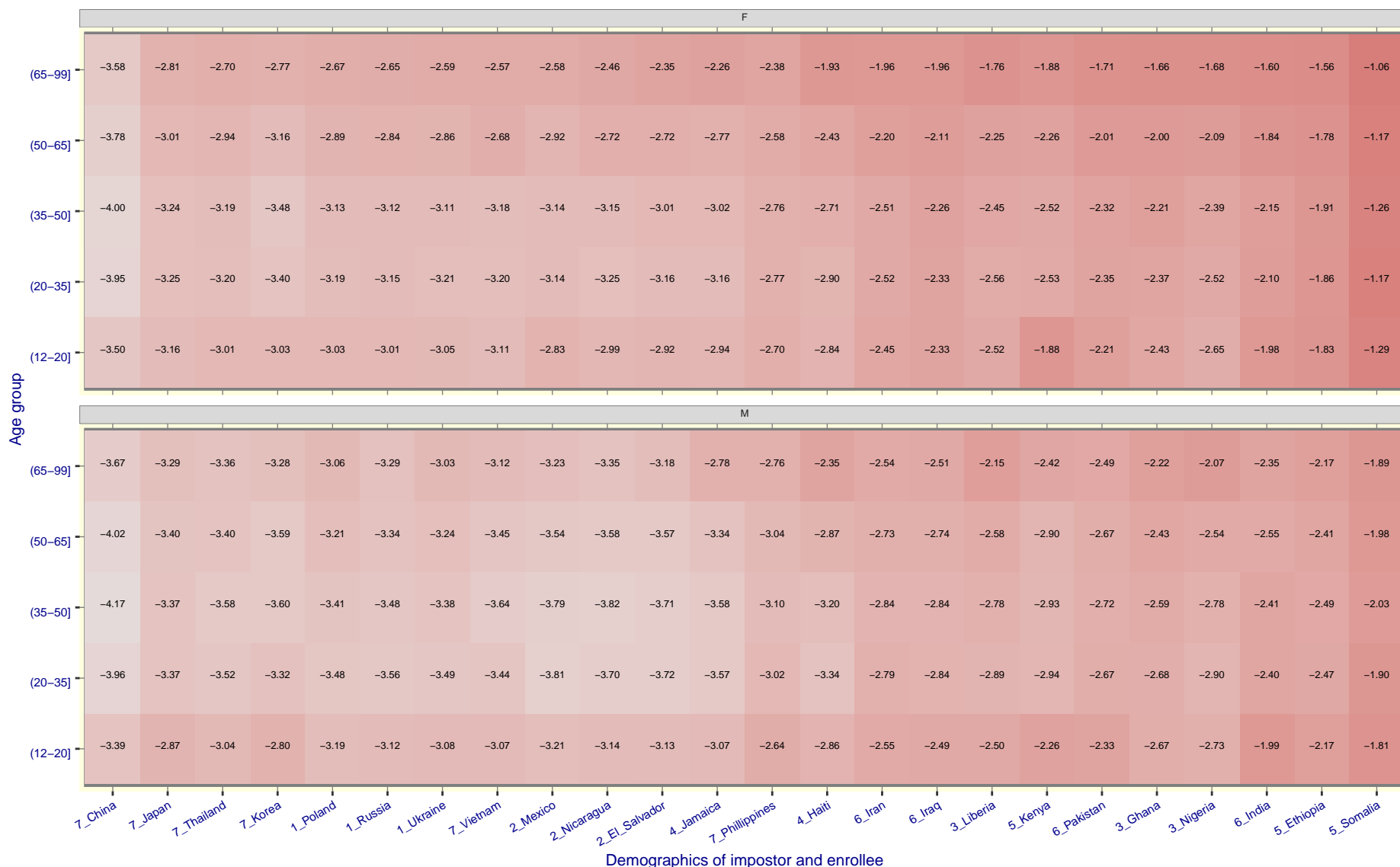
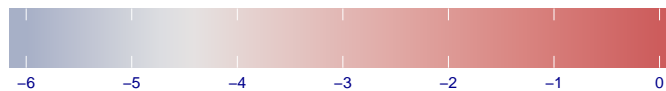




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/intellifusion\_001.pdf

Algorithm: intellifusion\_001 Threshold: 0.299850 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

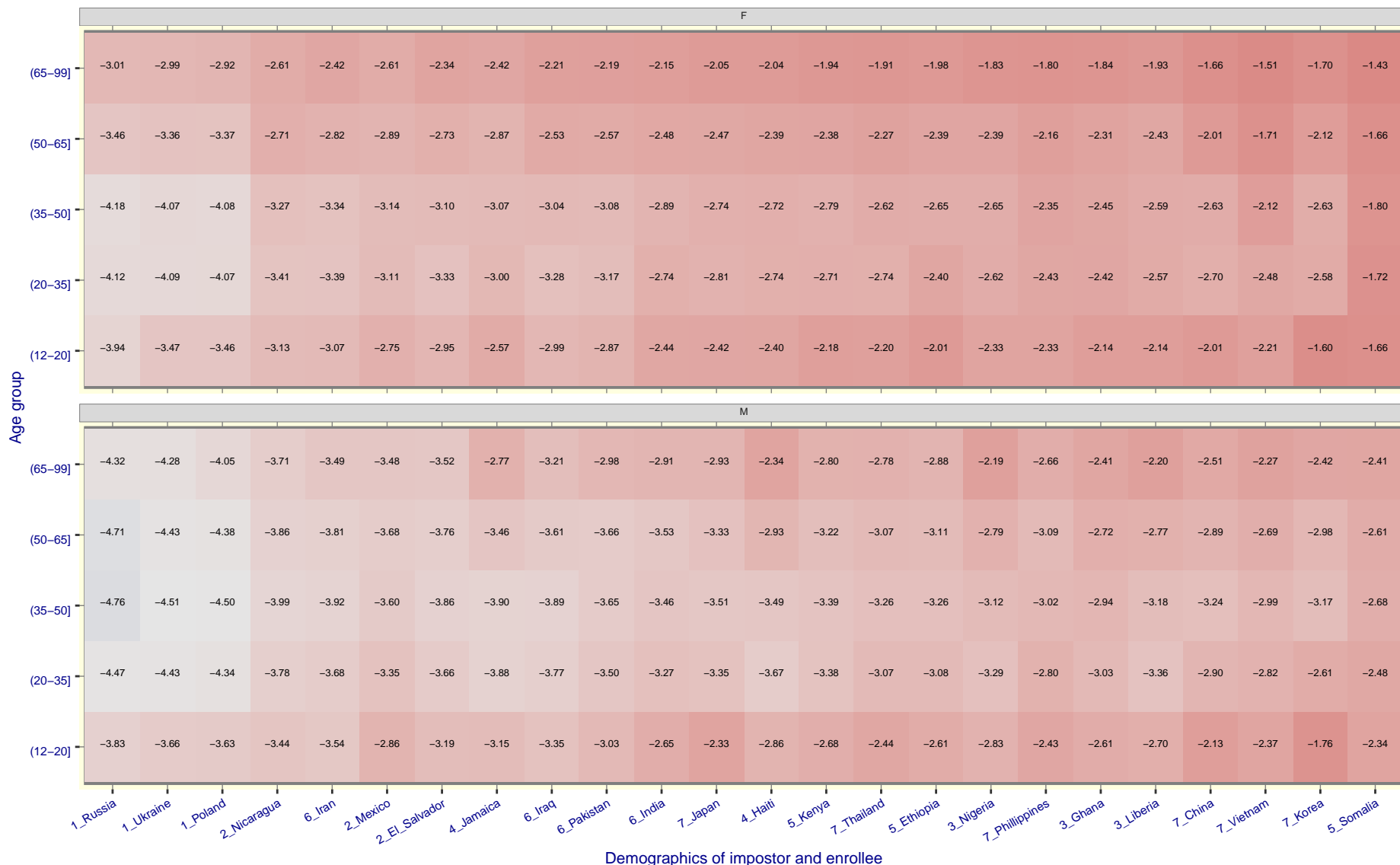
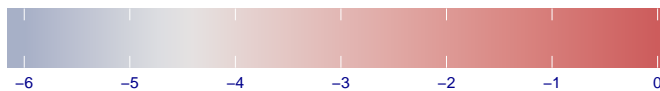
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/intellivision\_002.pdf

Algorithm: intellivision\_002 Threshold: 36.723813 Dataset: Application Nominal FMR: 0.000030

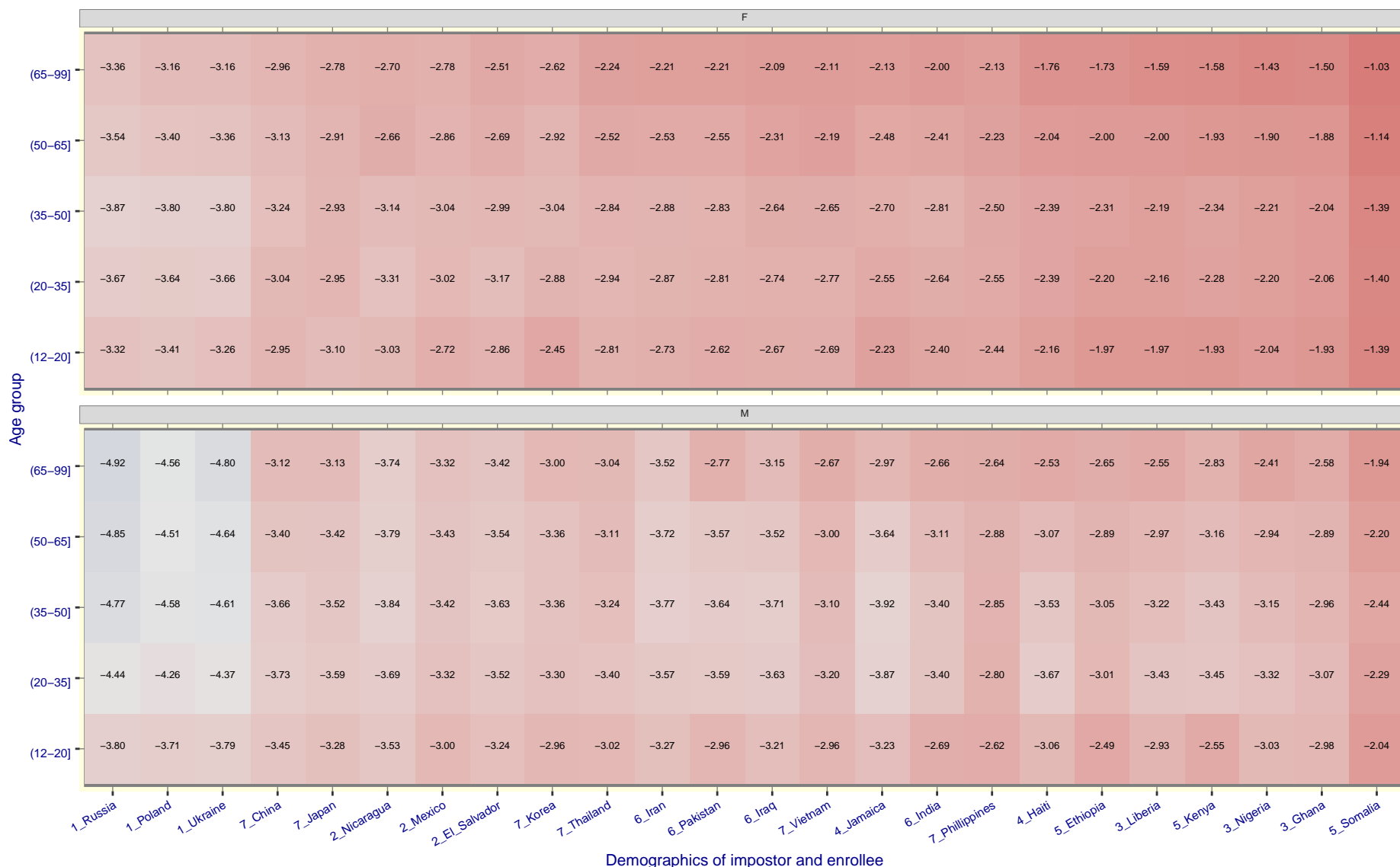
log10 FMR



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/intelresearch\_000.pdf

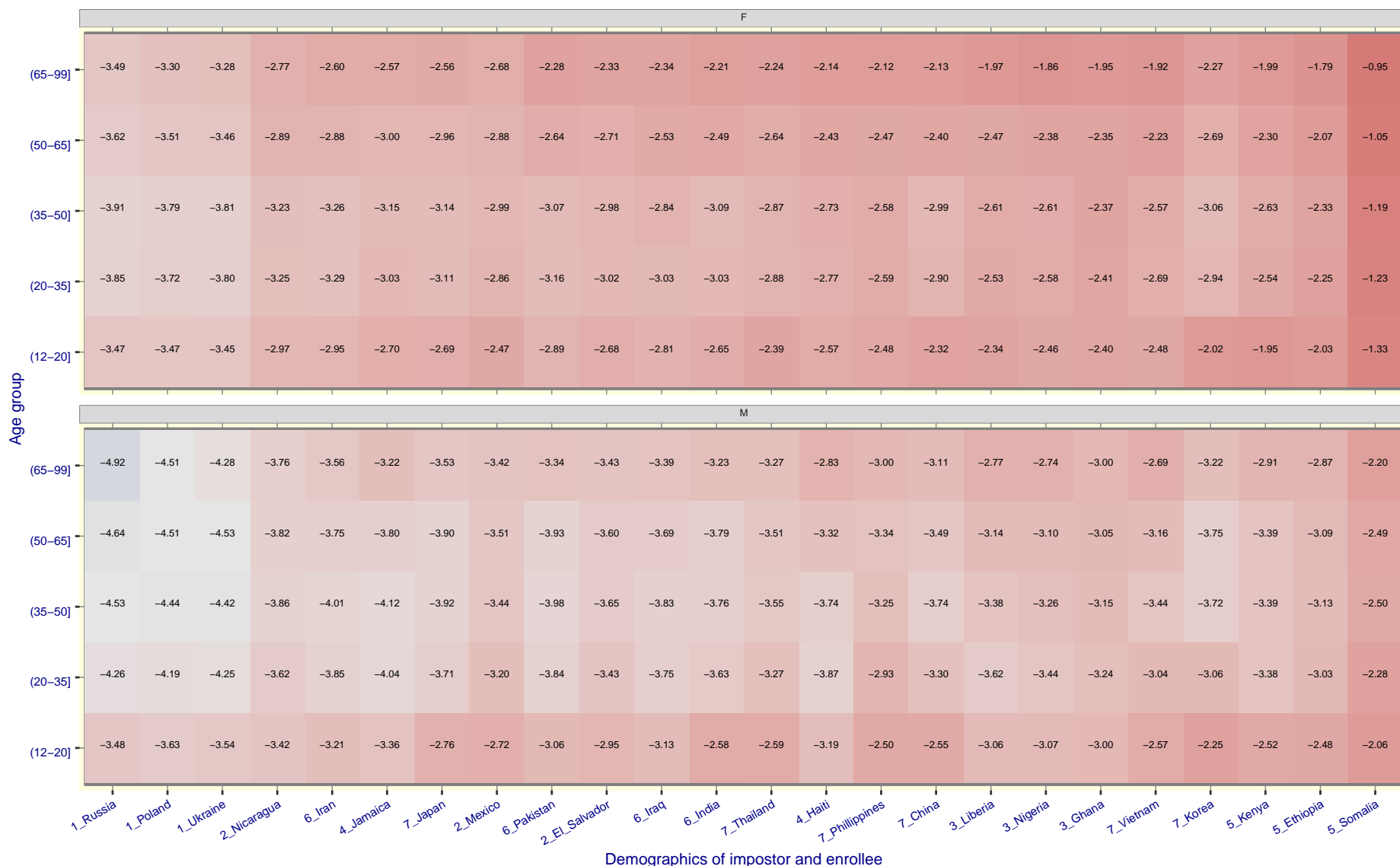
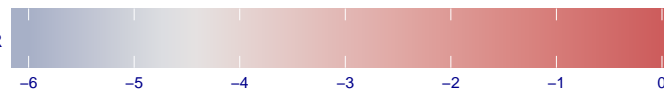
Algorithm: intelresearch\_000 Threshold: 596.908597 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/intsysmsu\_000.pdf

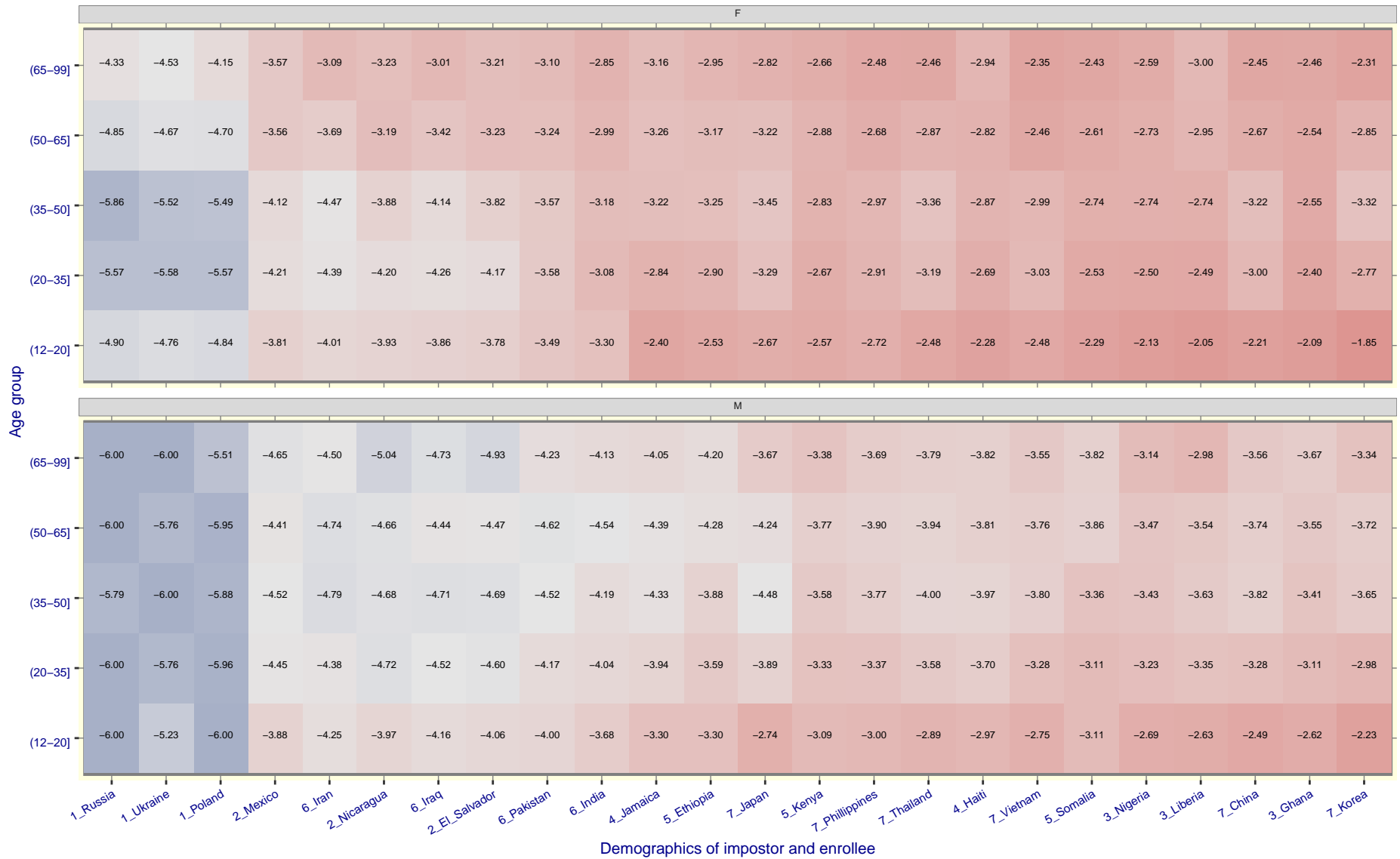
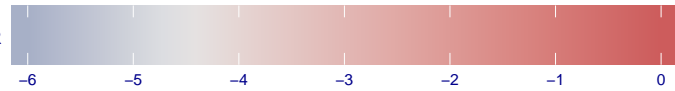
Algorithm: intsysmsu\_000 Threshold: 1.403950 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/isap\_001.pdf

Algorithm: isap\_001 Threshold: 0.984592 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth

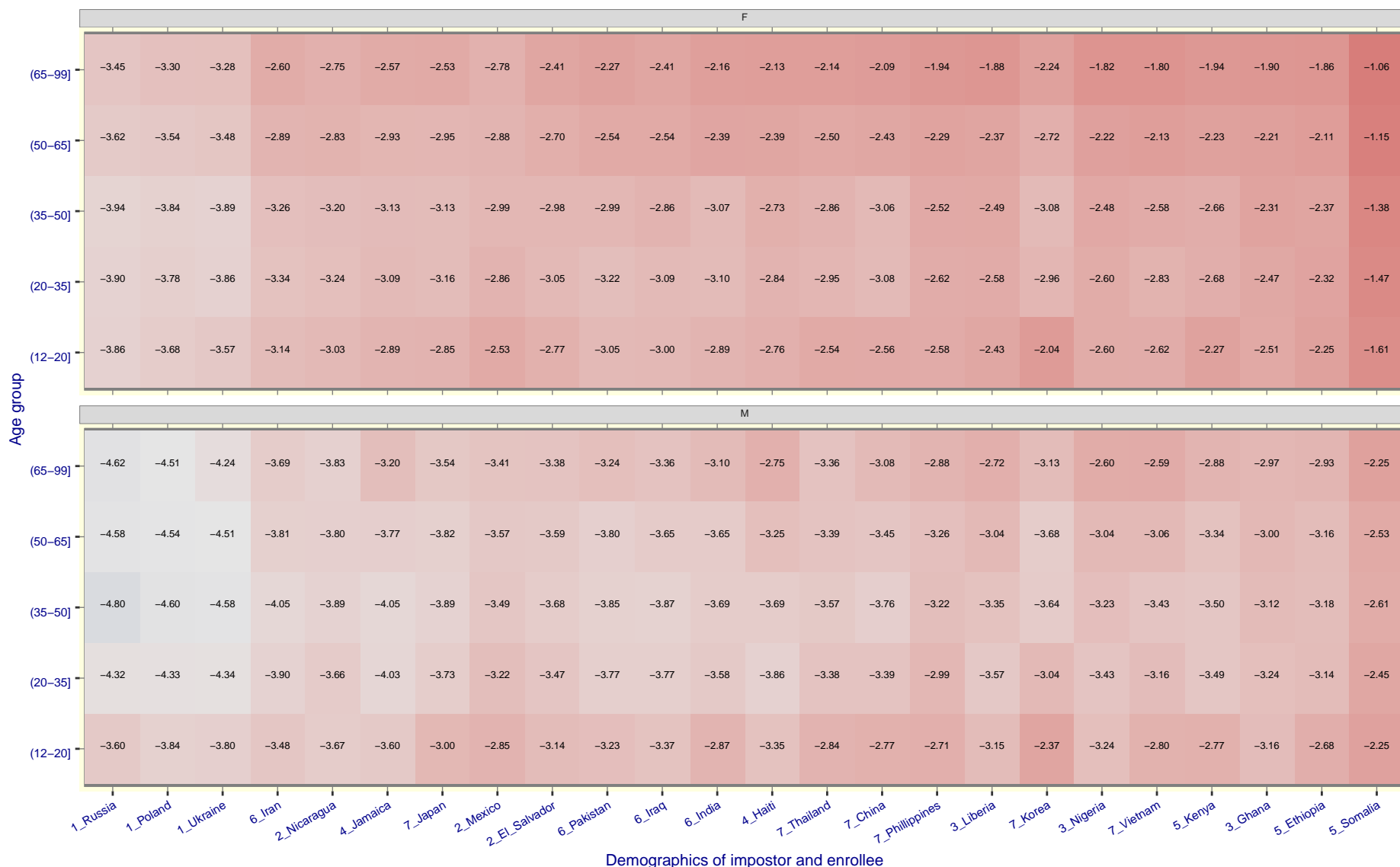
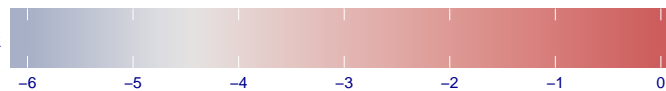


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/isystems\_001.pdf

Algorithm: isystems\_001 Threshold: 0.700563 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

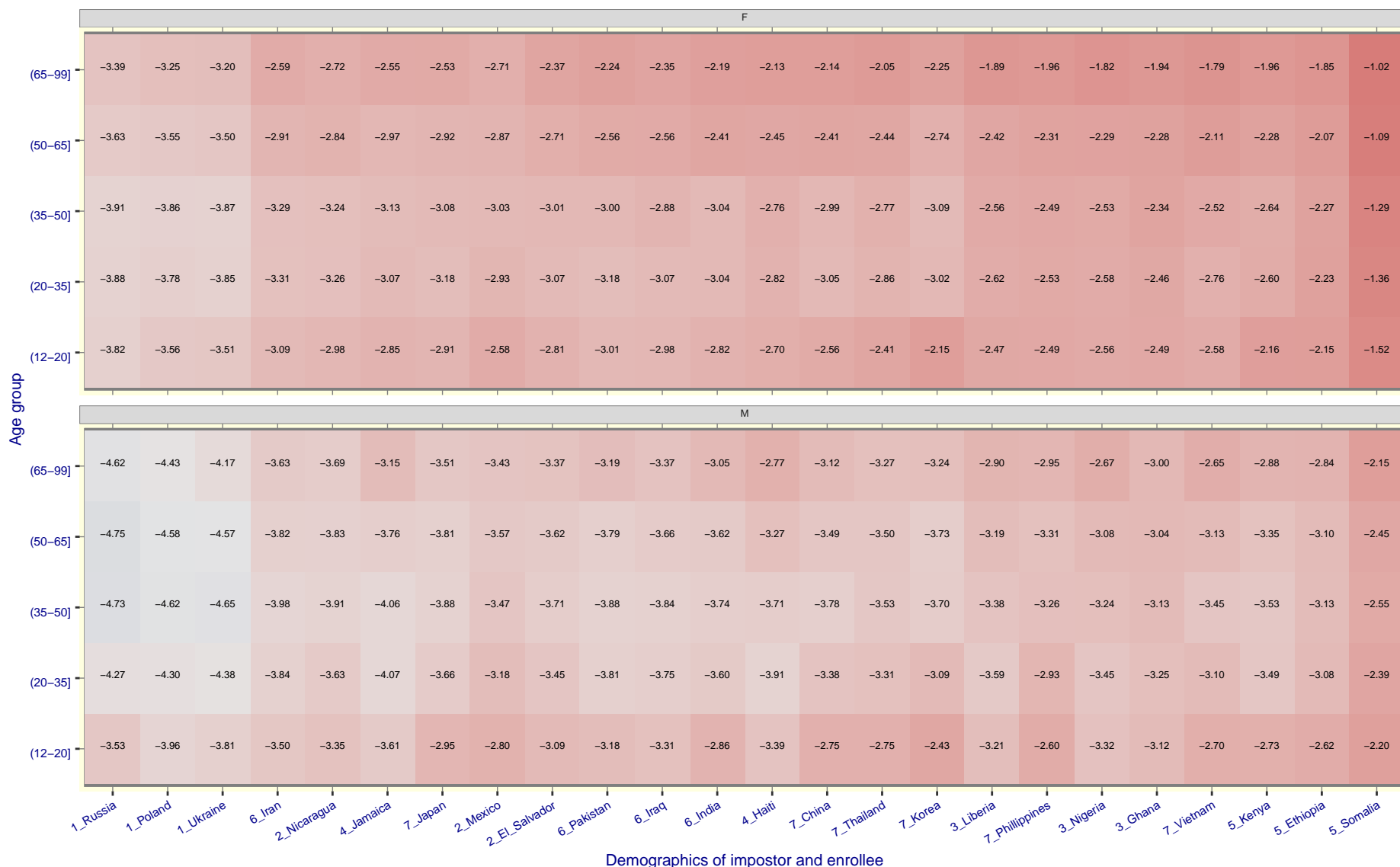
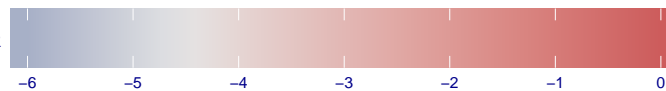
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/isystems\_002.pdf

Algorithm: isystems\_002 Threshold: 0.698227 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

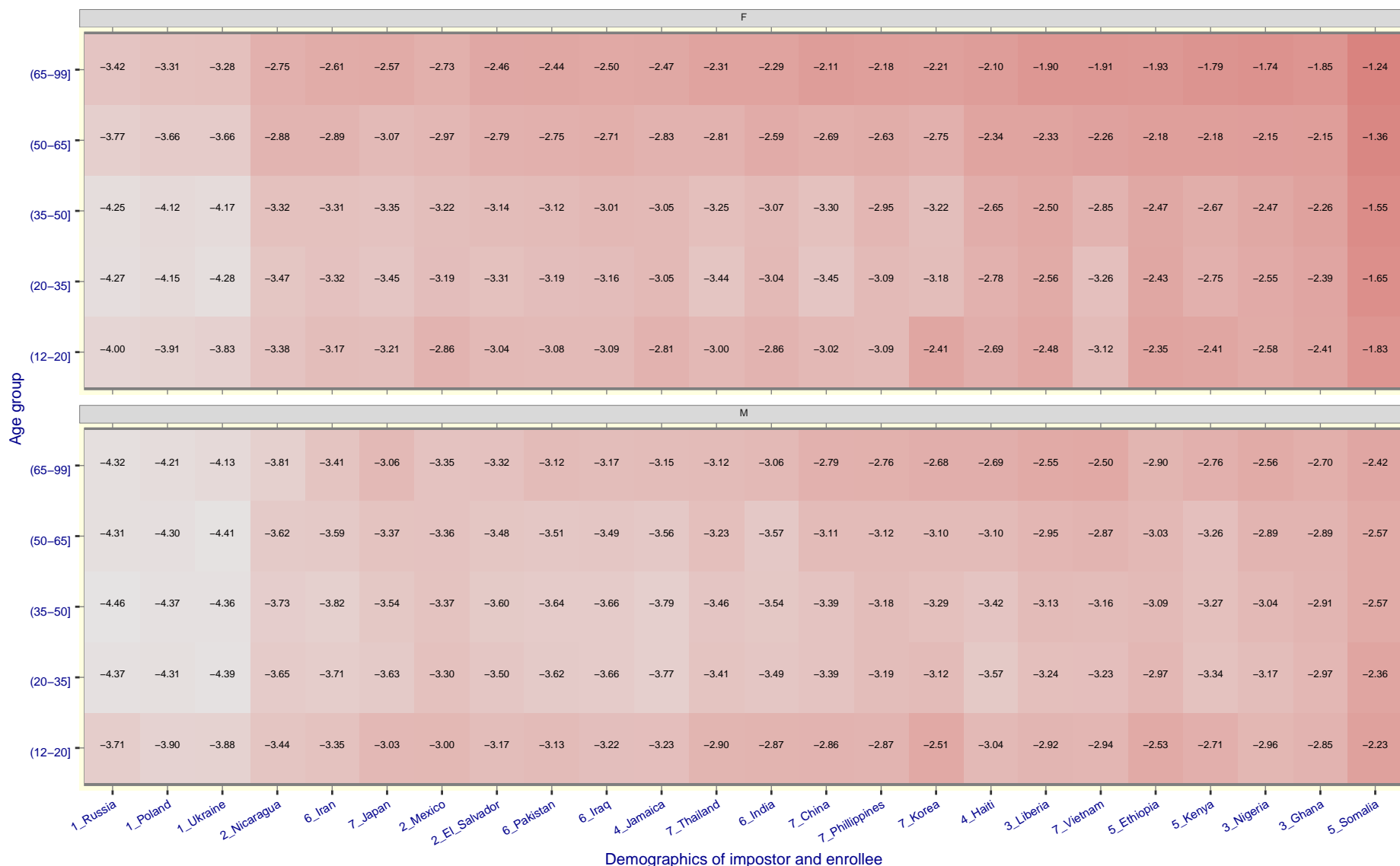
log10 FMR



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/itmo\_005.pdf

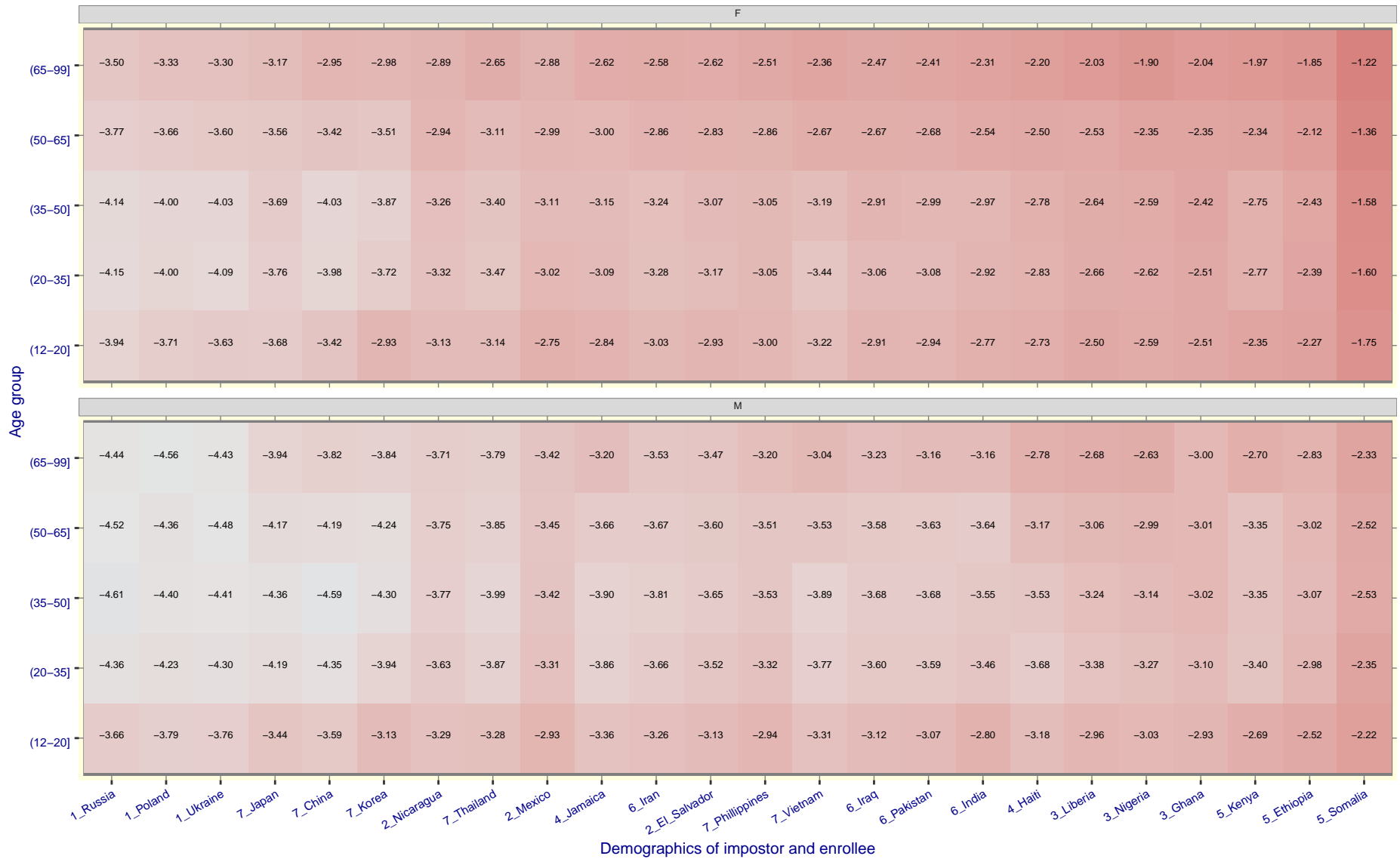
Algorithm: itmo\_005 Threshold: 76.370951 Dataset: Application Nominal FMR: 0.000030 log10 FMR





reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/itmo\_006.pdf

Algorithm: itmo\_006 Threshold: 86.534845 Dataset: Application Nominal FMR: 0.000030 log10 FMR

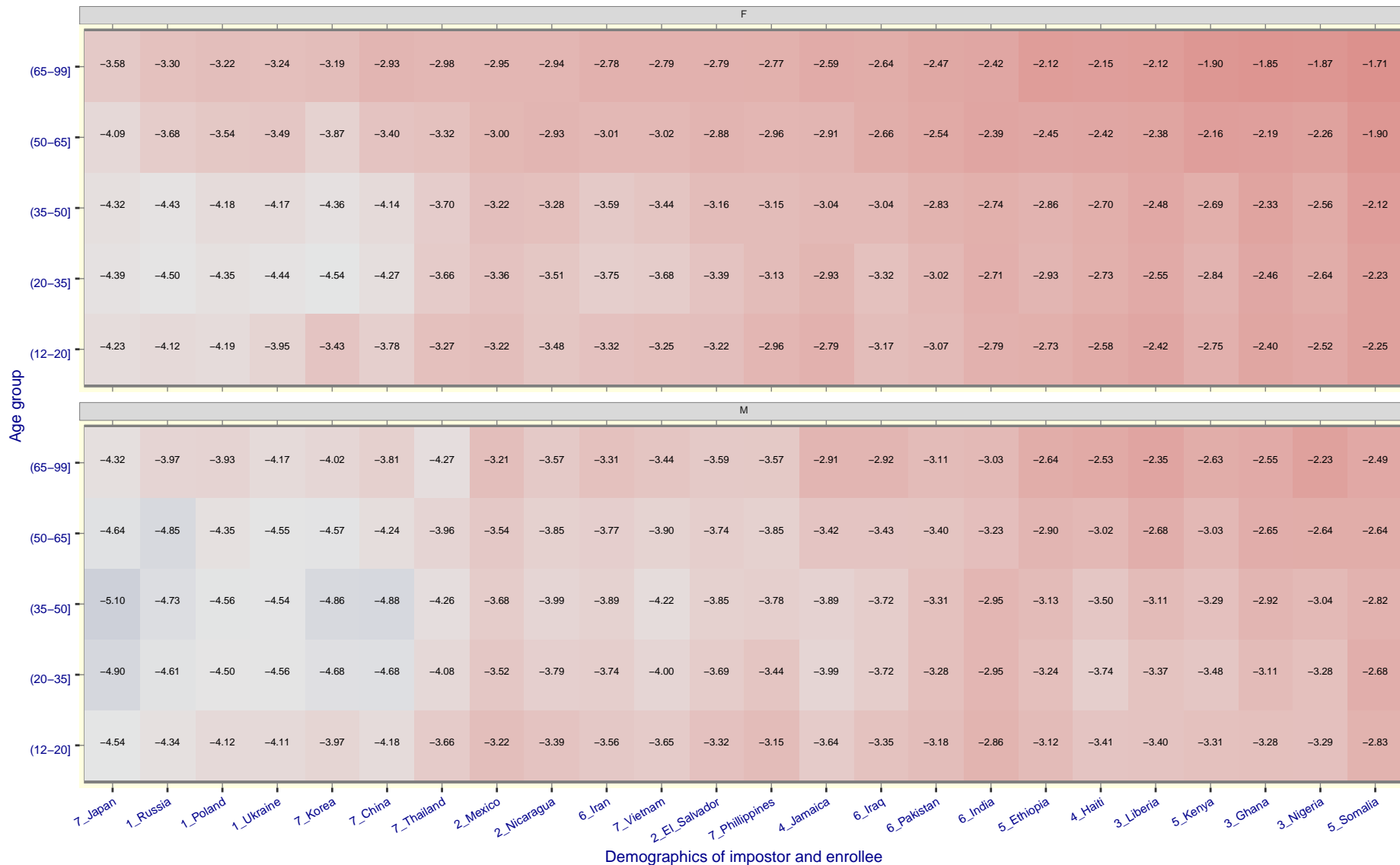
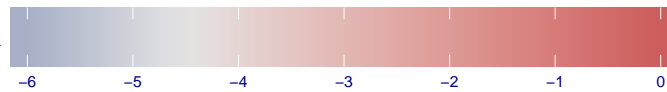


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/kakao\_002.pdf

Algorithm: kakao\_002 Threshold: 0.970857 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

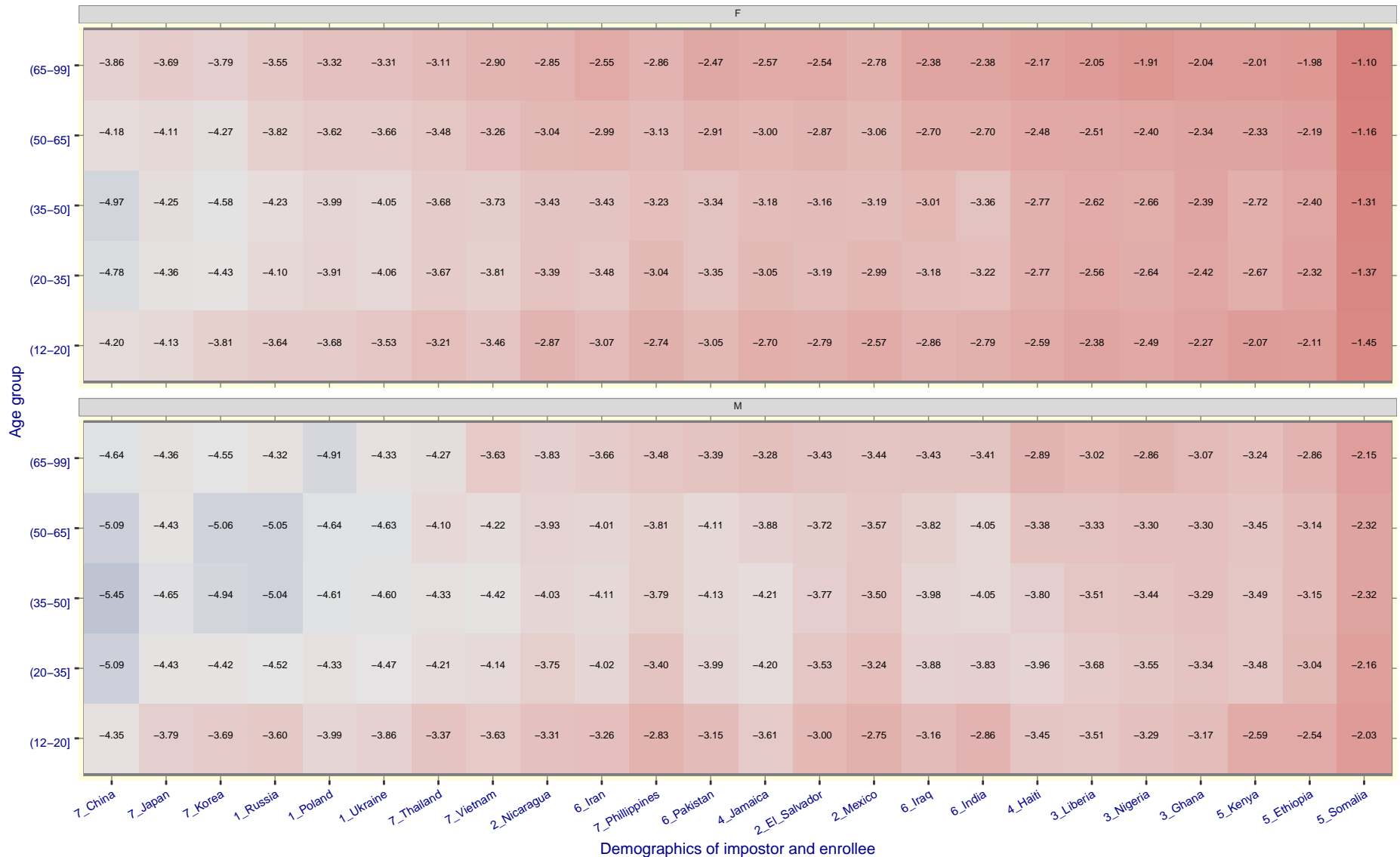
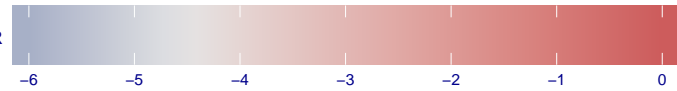
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/kedacom\_000.pdf

Algorithm: kedacom\_000 Threshold: 0.707984 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

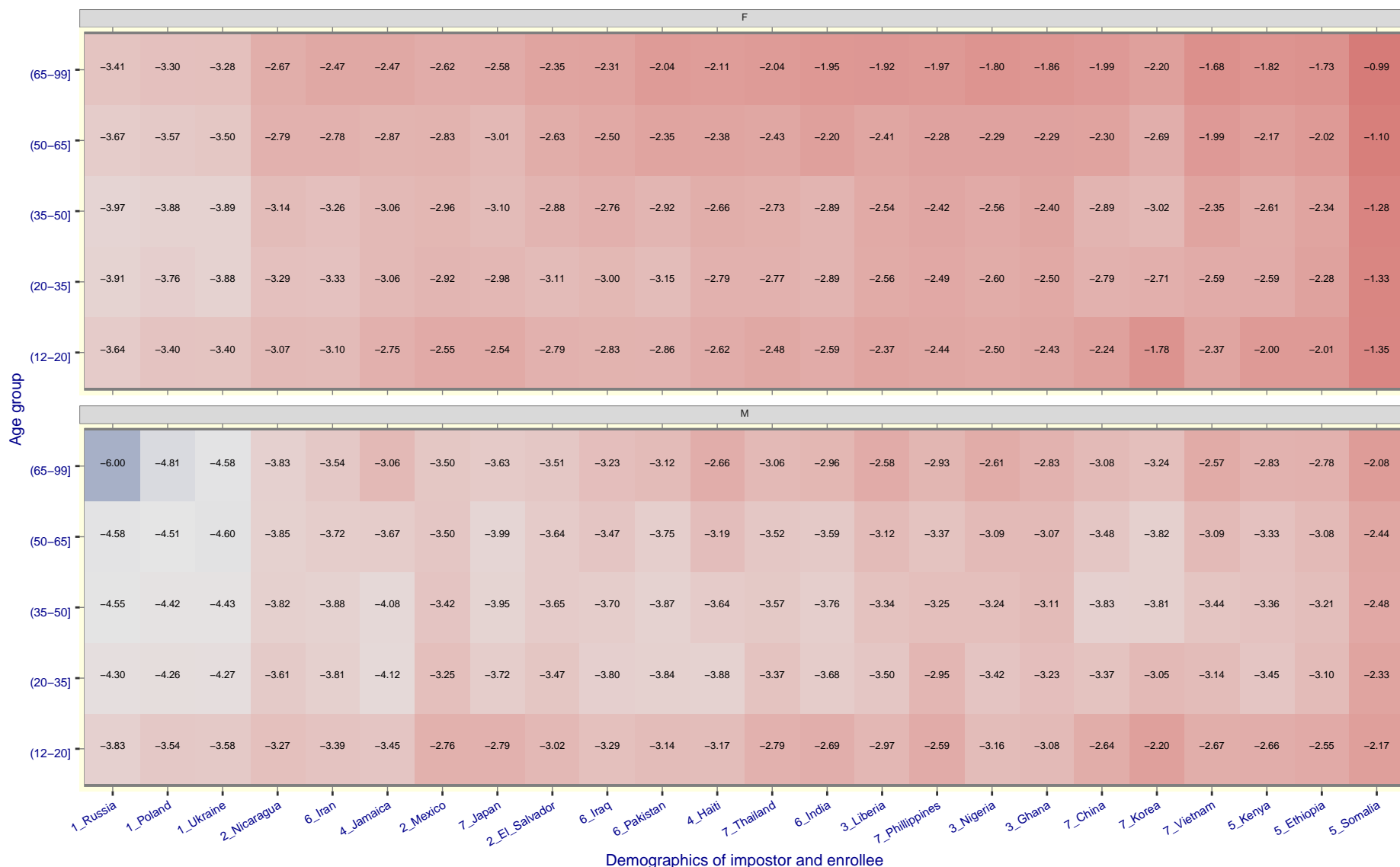
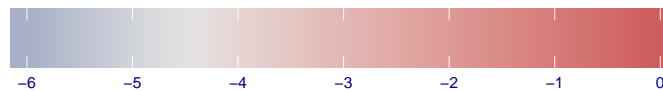
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/kneron\_003.pdf

Algorithm: kneron\_003 Threshold: 0.483271 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

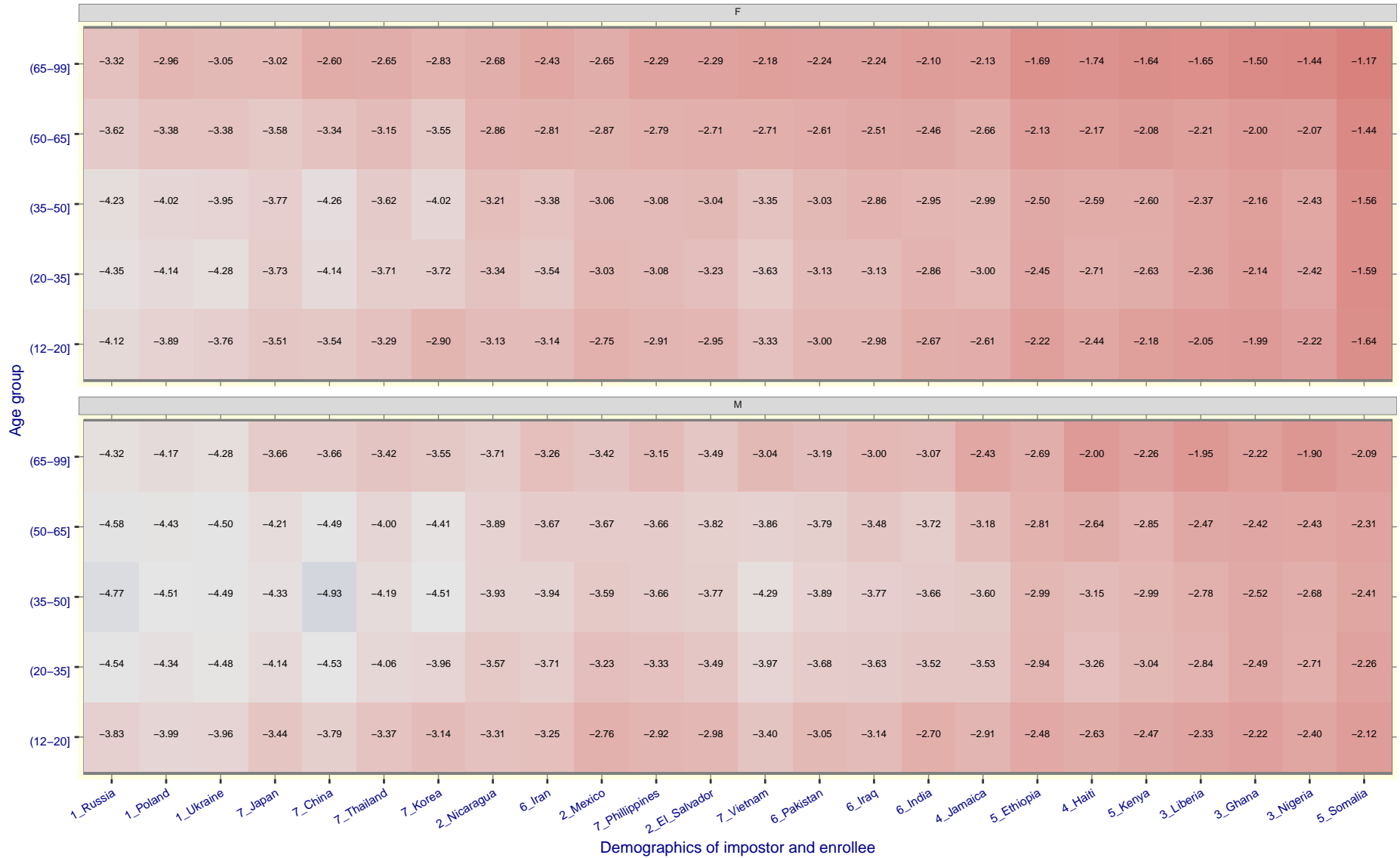
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/lookman\_002.pdf

Algorithm: lookman\_002 Threshold: 0.710714 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

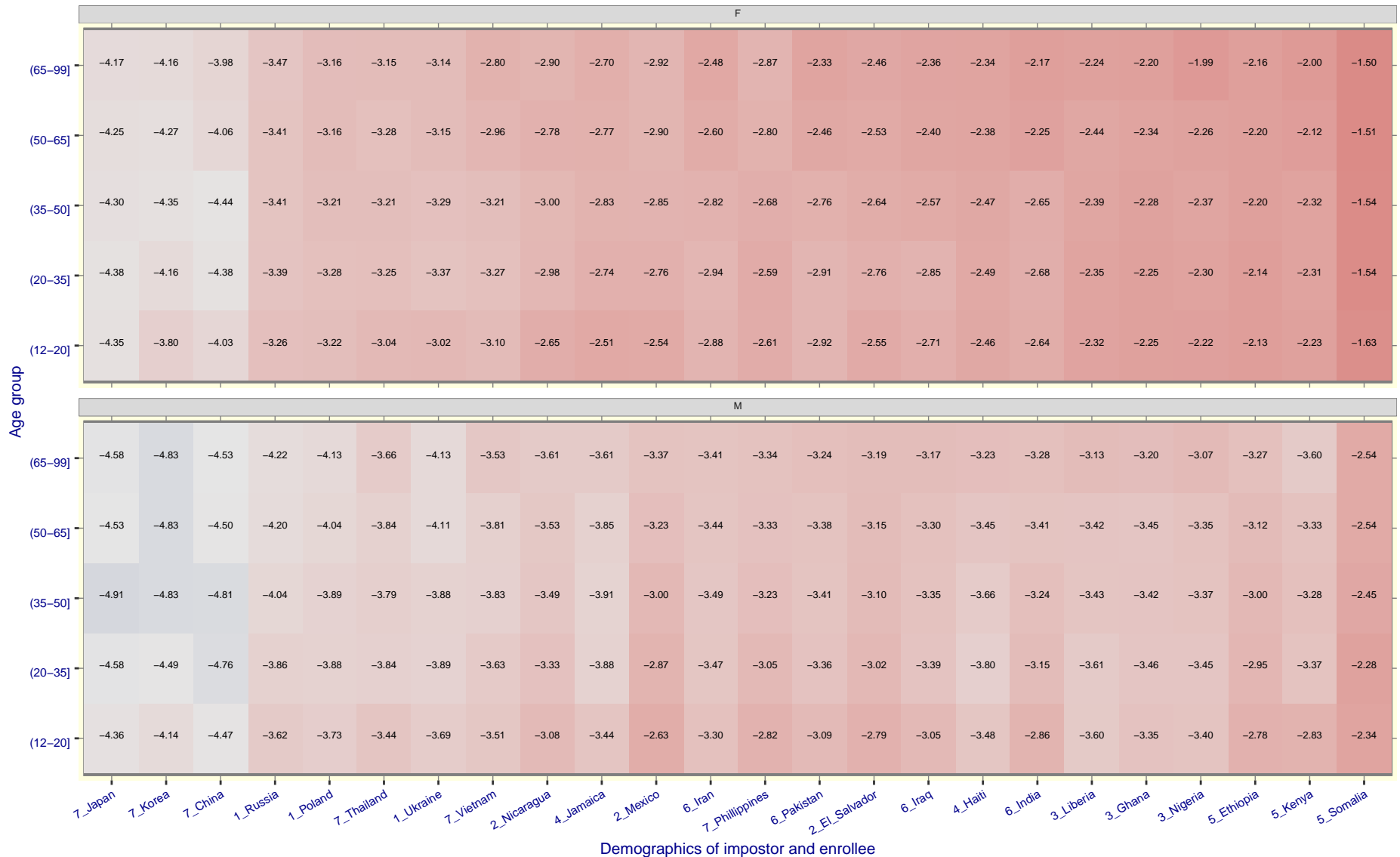
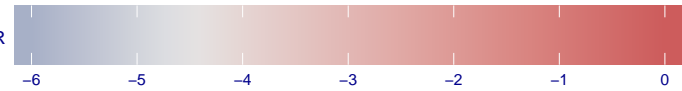
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/lookman\_004.pdf

Algorithm: lookman\_004 Threshold: 0.750753 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

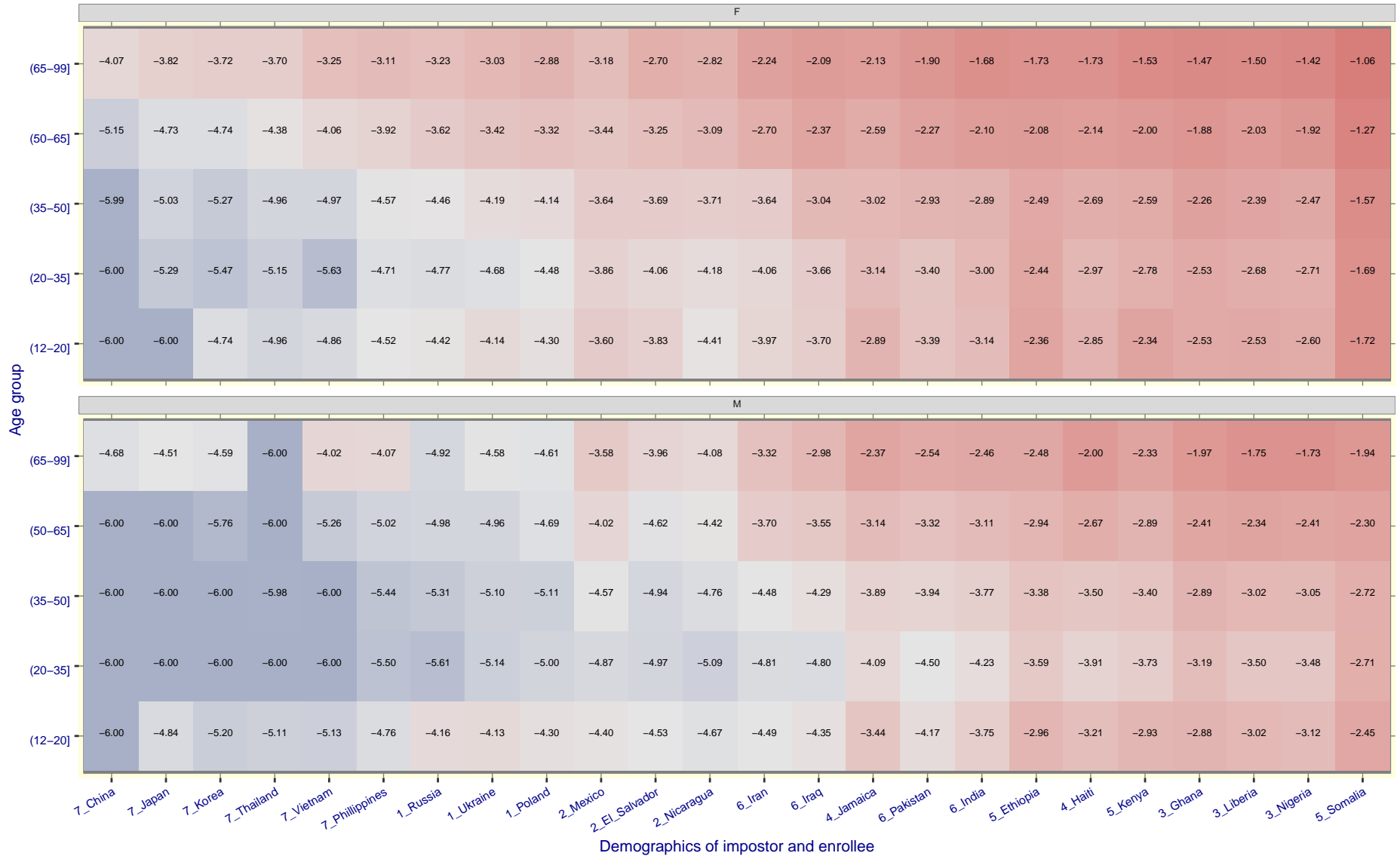


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/megvii\_001.pdf

Algorithm: megvii\_001 Threshold: 78.451940 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

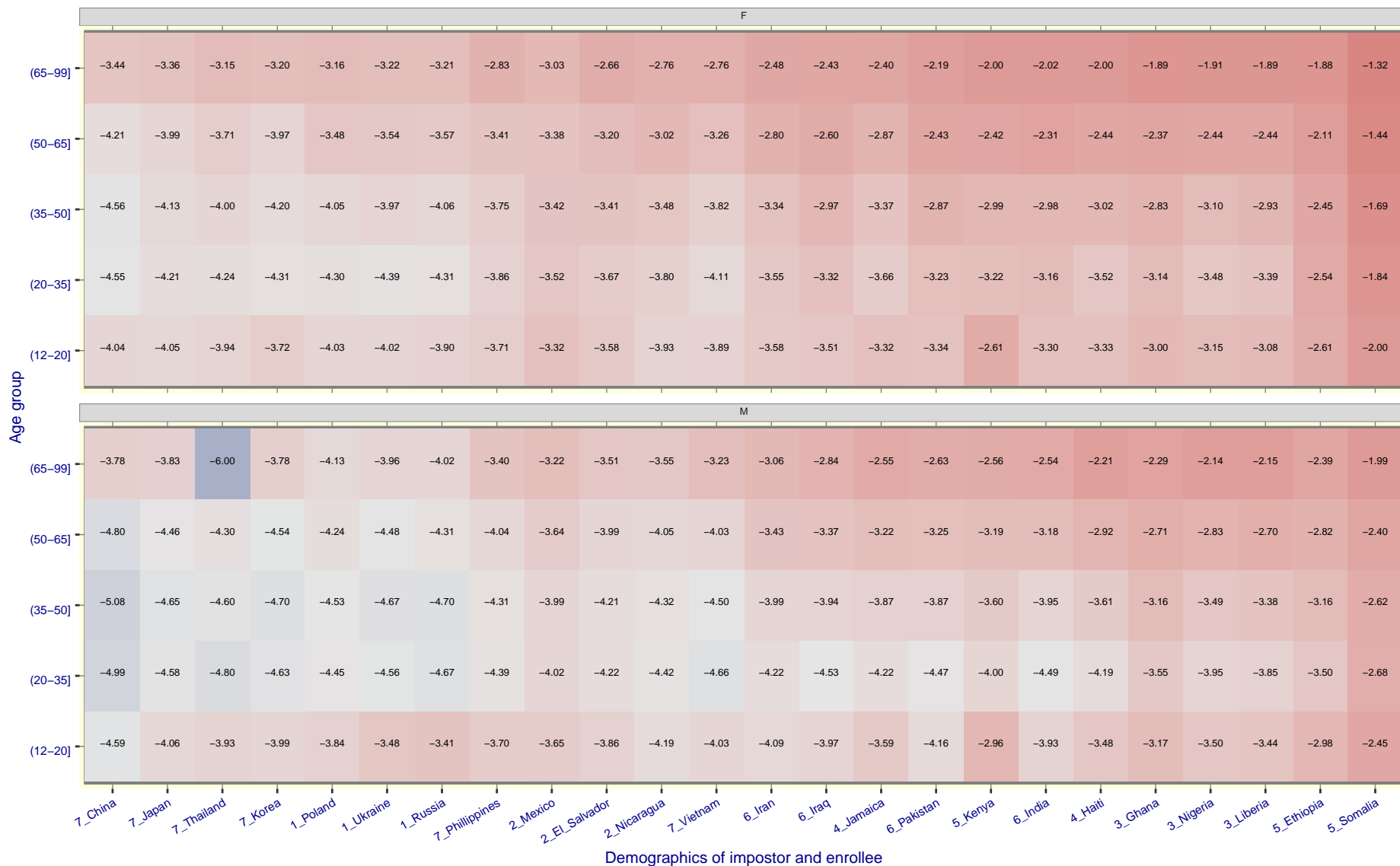
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/megvii\_002.pdf

Algorithm: megvii\_002 Threshold: 71.017436 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

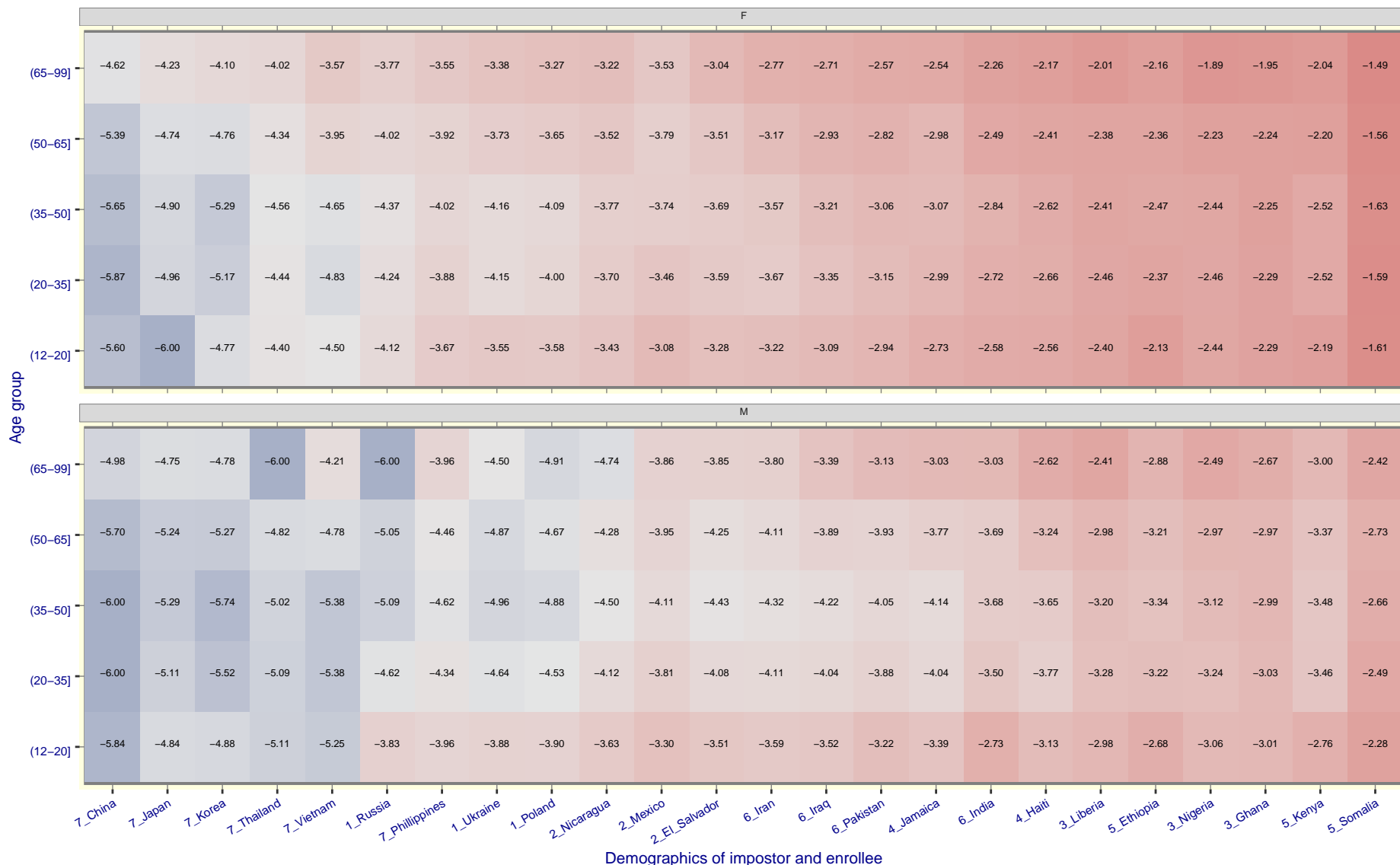
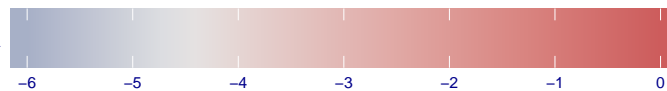
log10 FMR





reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/meiya\_001.pdf

Algorithm: meiya\_001 Threshold: 0.464403 Dataset: Application Nominal FMR: 0.000030 log10 FMR

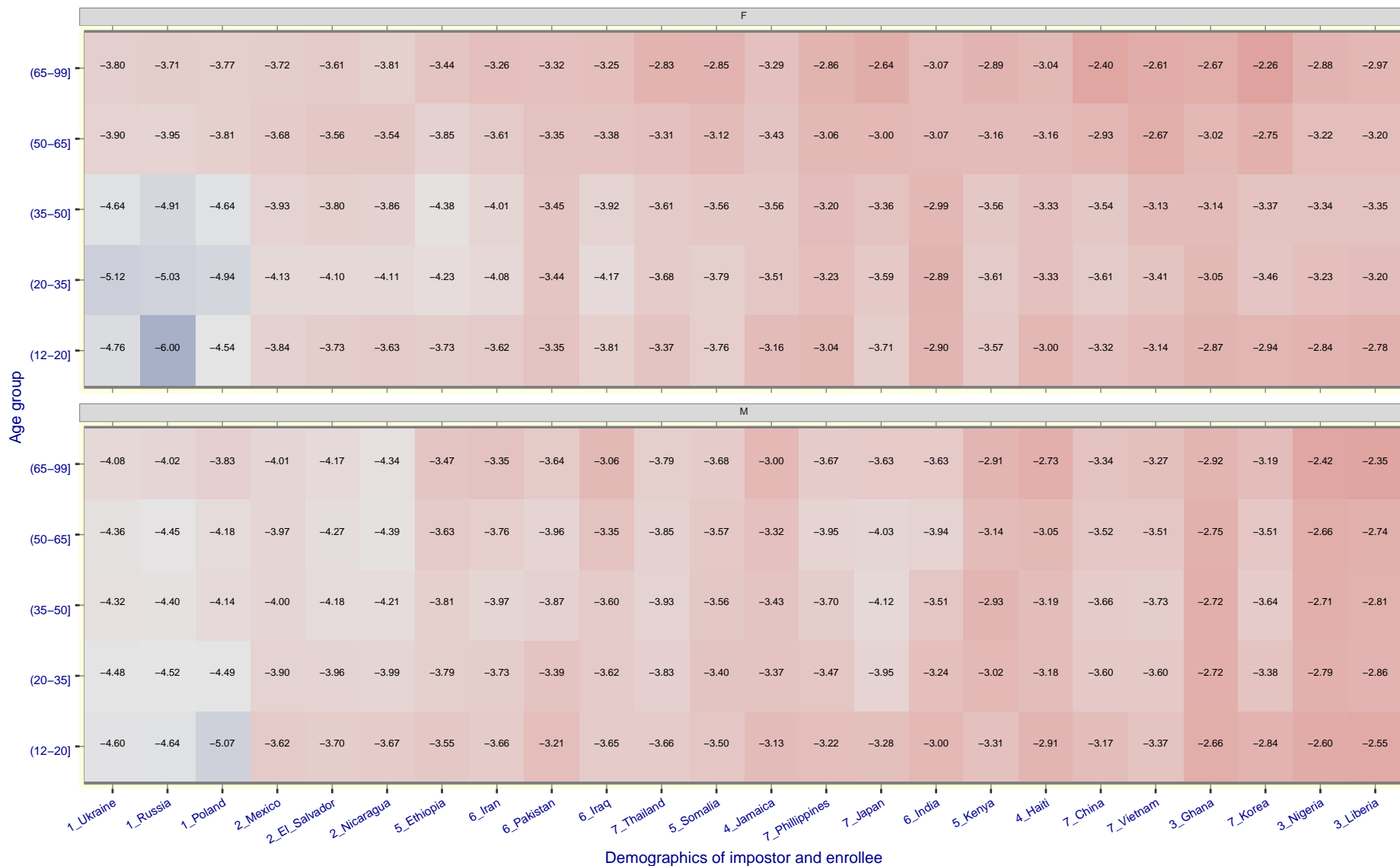
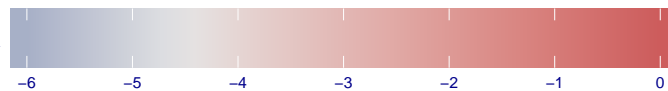


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/microfocus\_001.pdf

Algorithm: microfocus\_001 Threshold: 0.692788 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

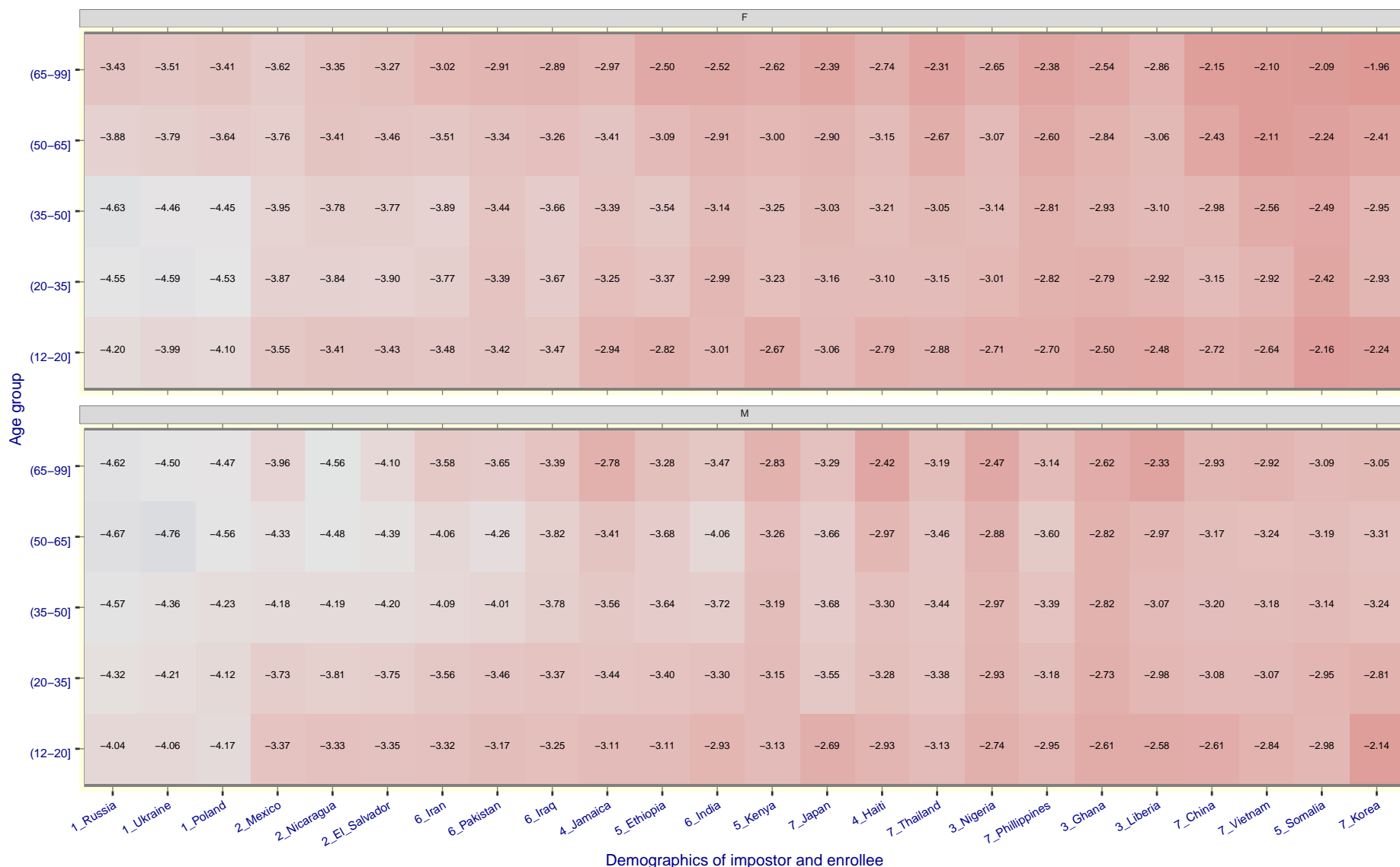
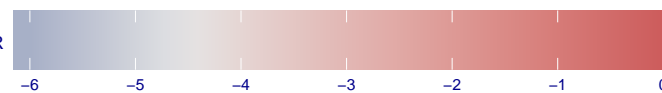
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/microfocus\_002.pdf

Algorithm: microfocus\_002 Threshold: 0.614144 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

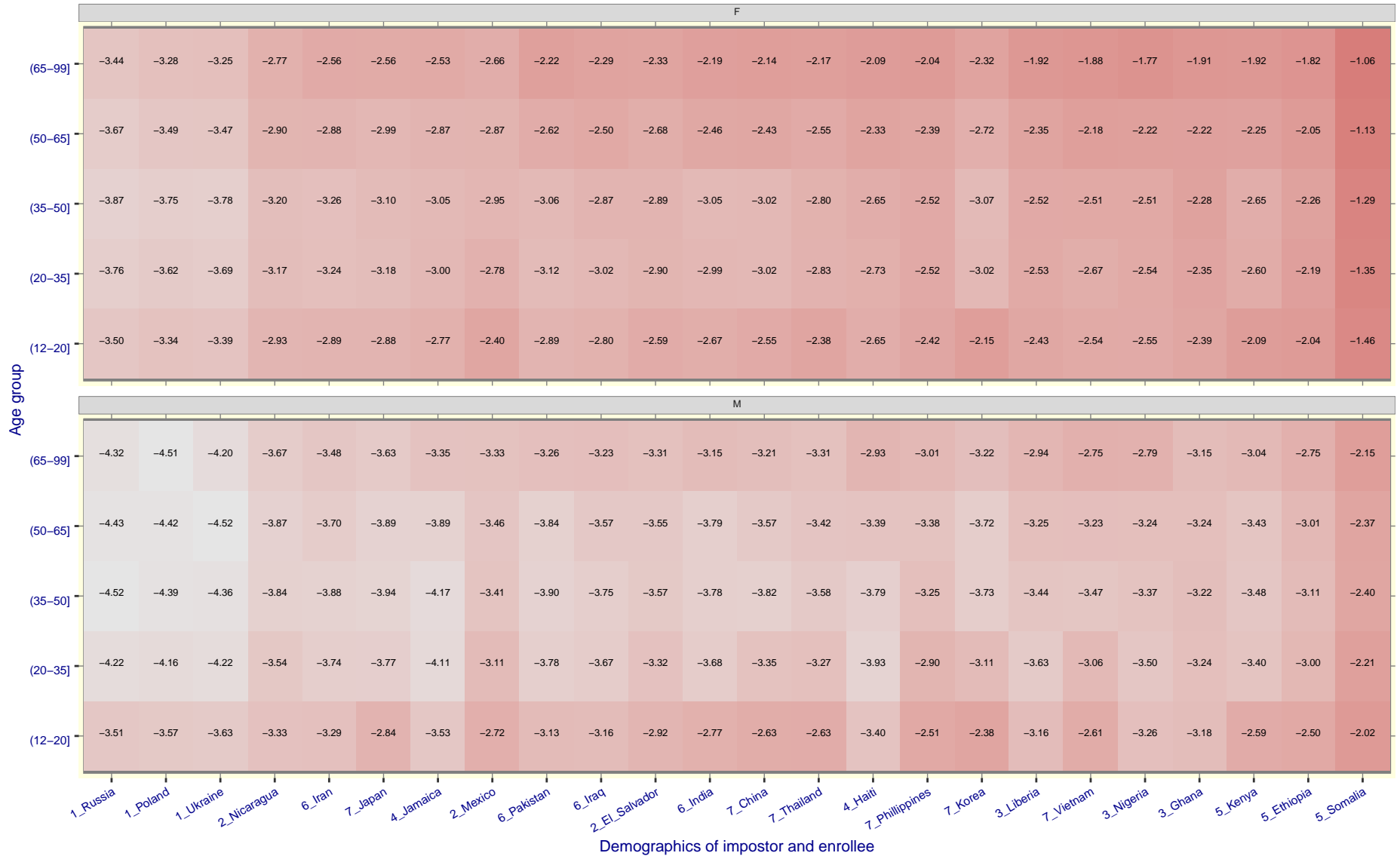
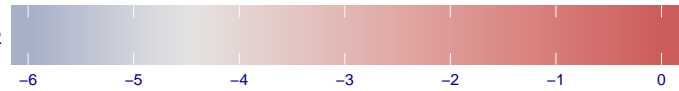


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/mt\_000.pdf

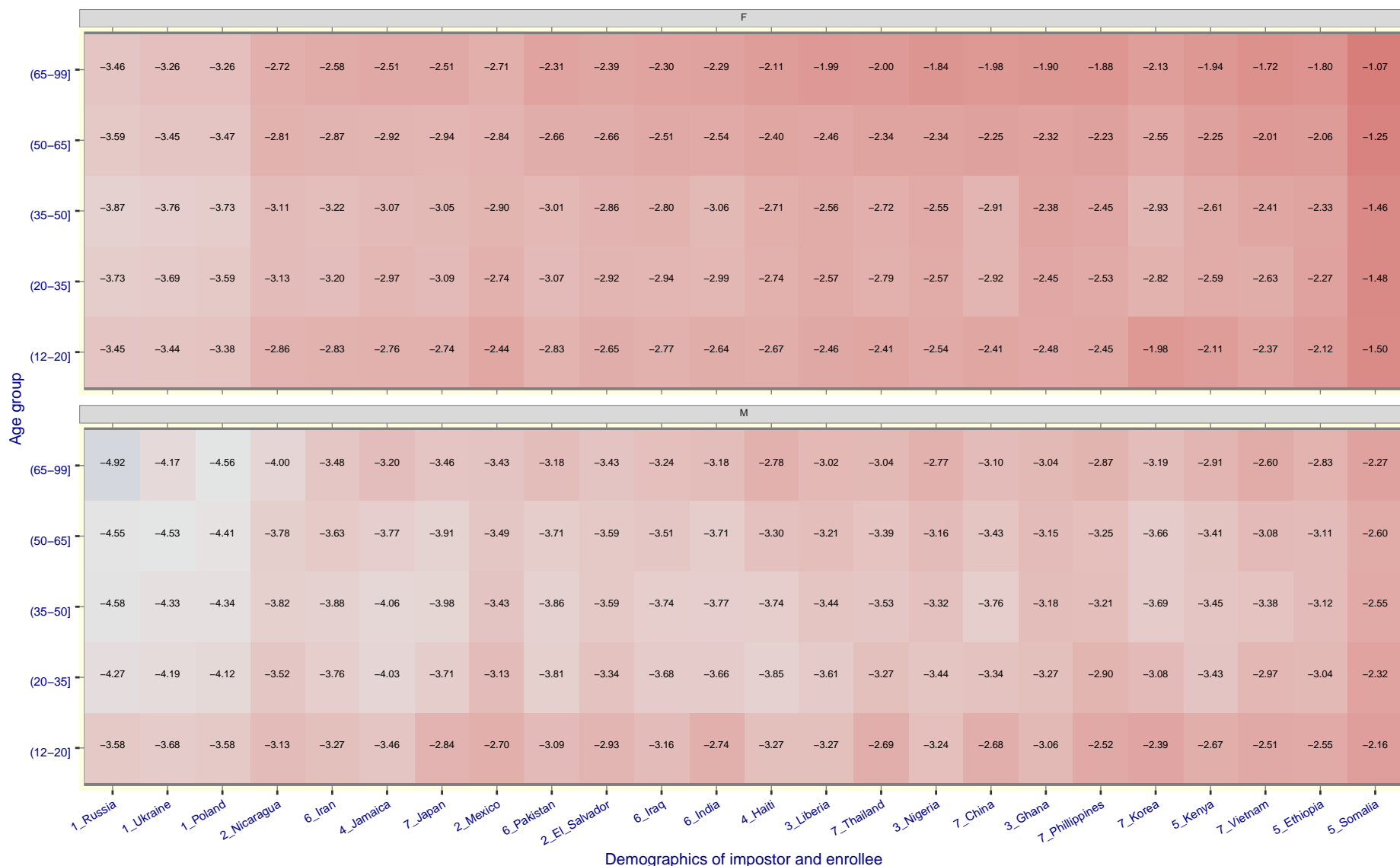
Algorithm: mt\_000 Threshold: 1.413905 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



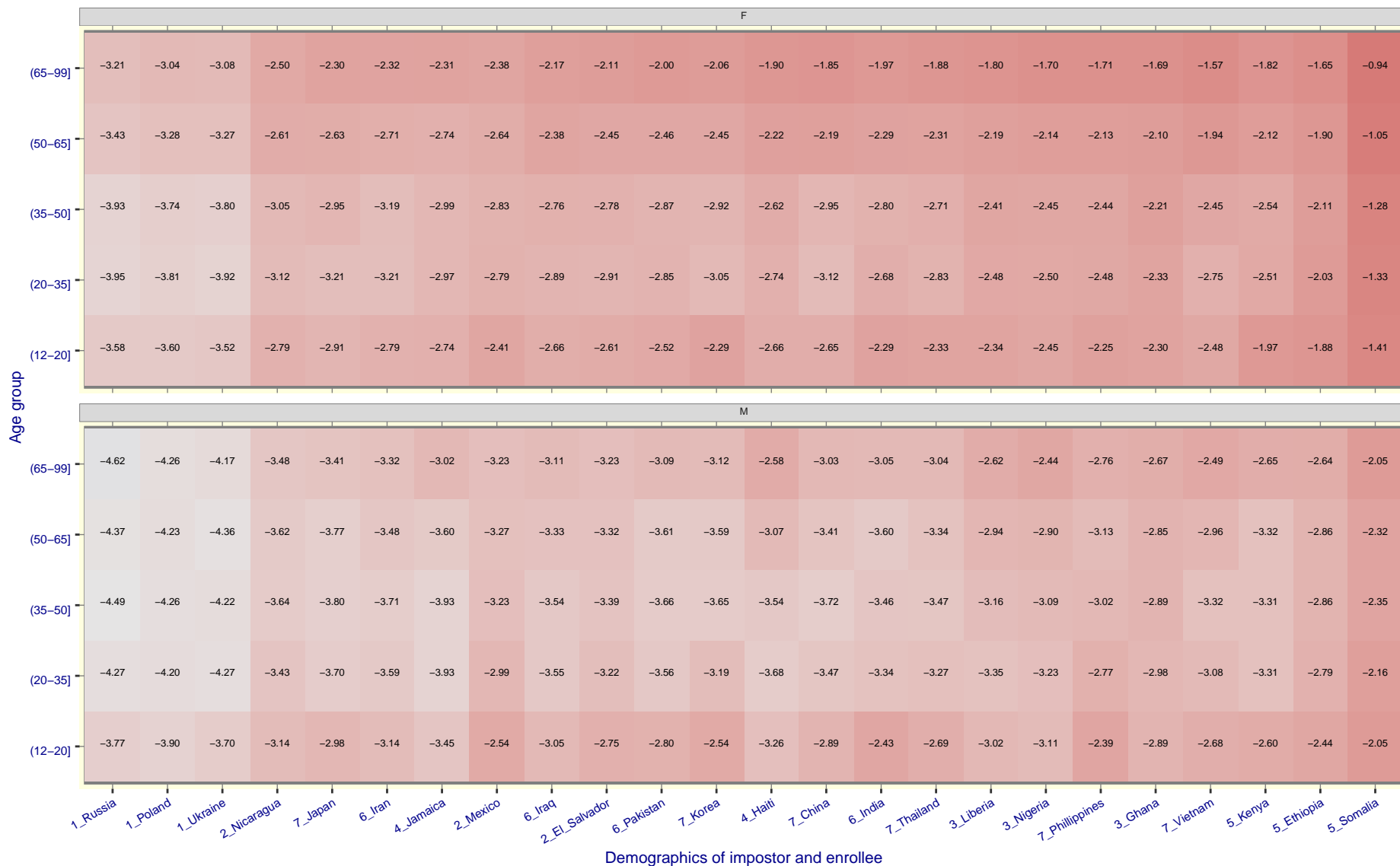
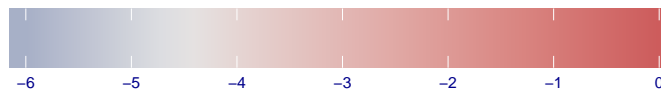
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/neurotechnology\_005.pdf

Algorithm: neurotechnology\_005 Threshold: 47.666700 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/neurotechnology\_006.pdf

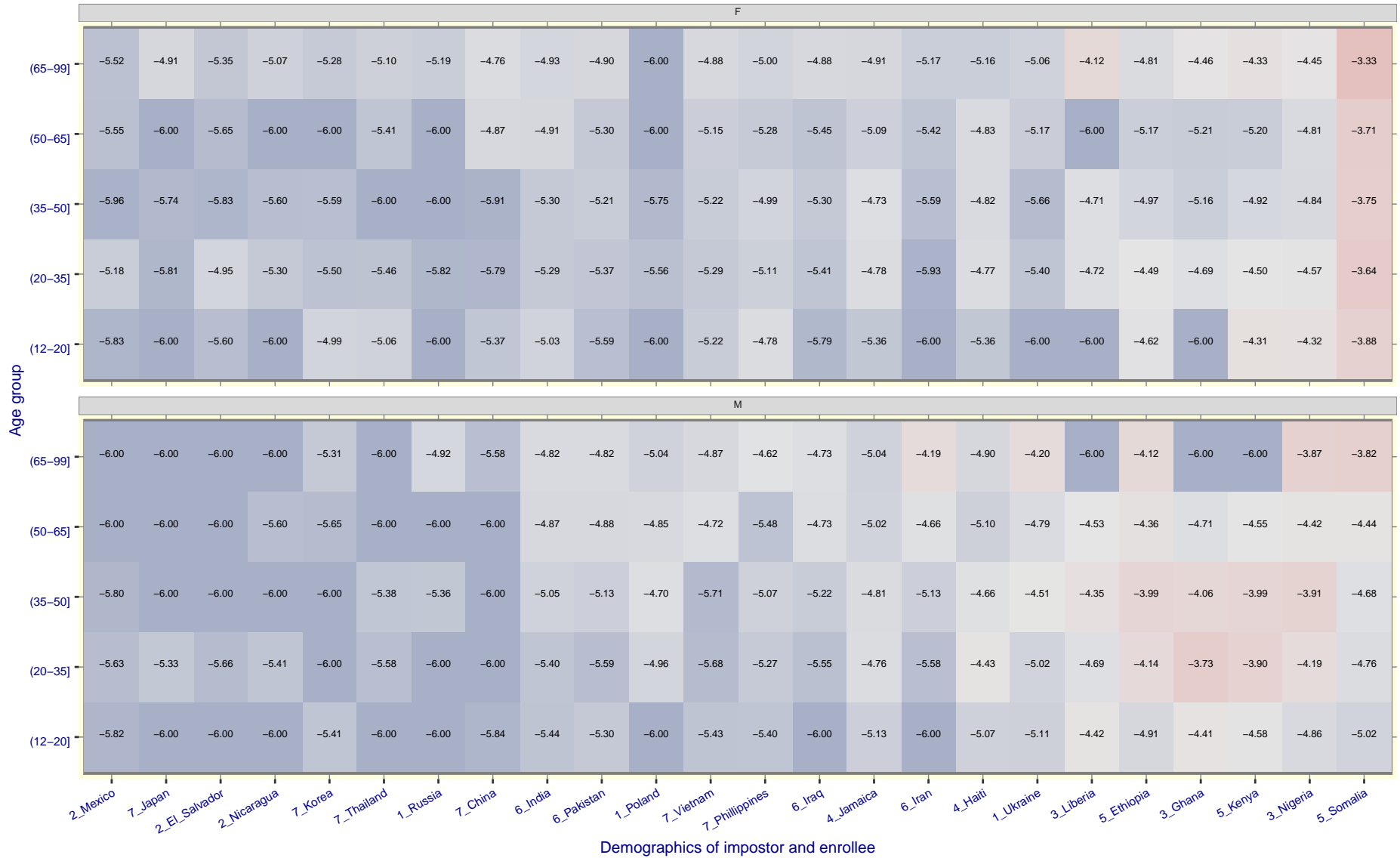
Algorithm: neurotechnology\_006 Threshold: 2163.314510 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/nodeflux\_001.pdf

Algorithm: nodeflux\_001 Threshold: 0.571472 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

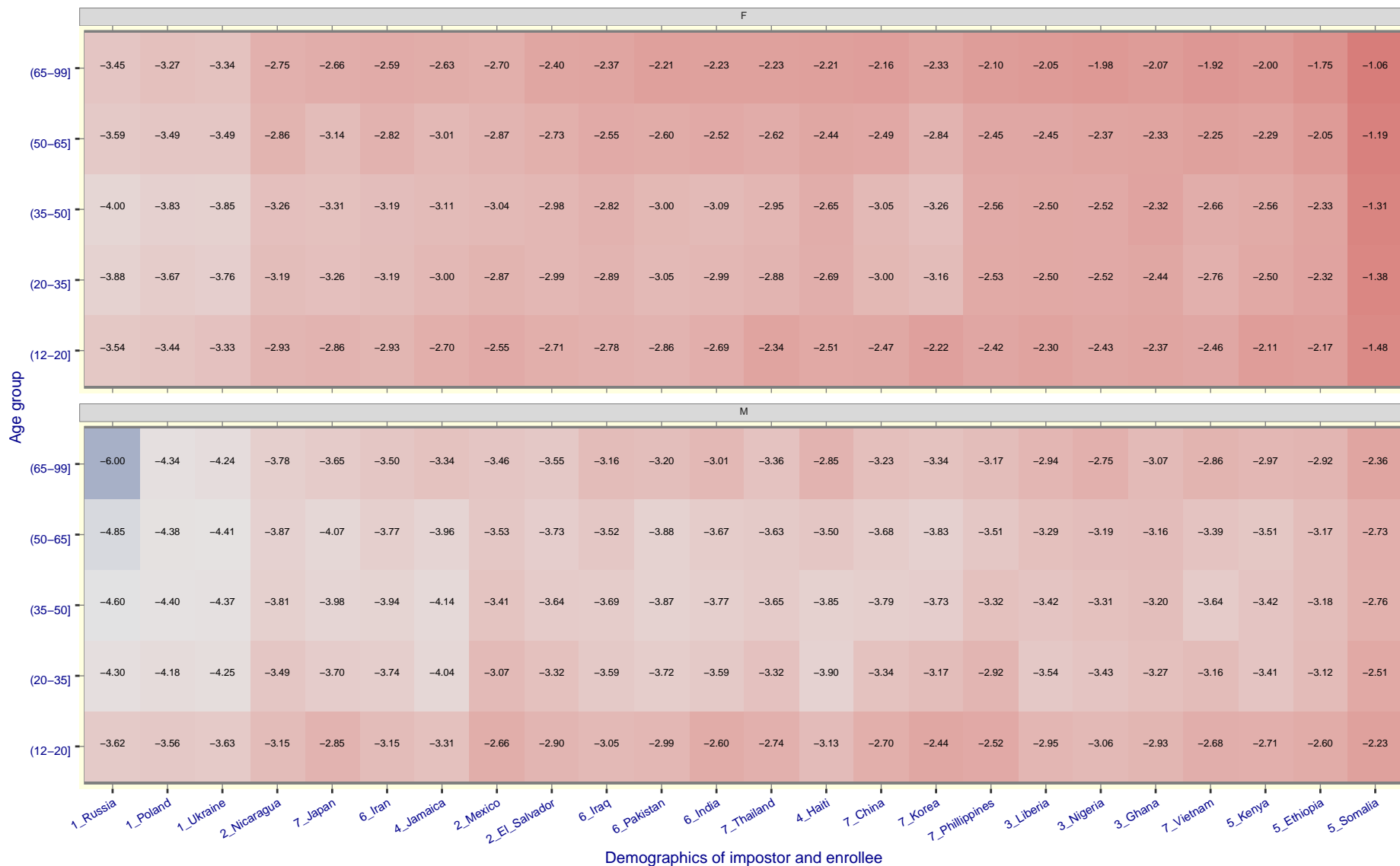
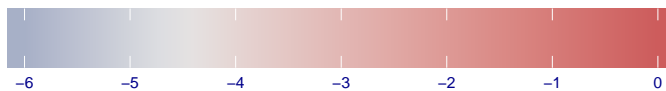


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/nodeflux\_002.pdf

Algorithm: nodeflux\_002 Threshold: 0.460712 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

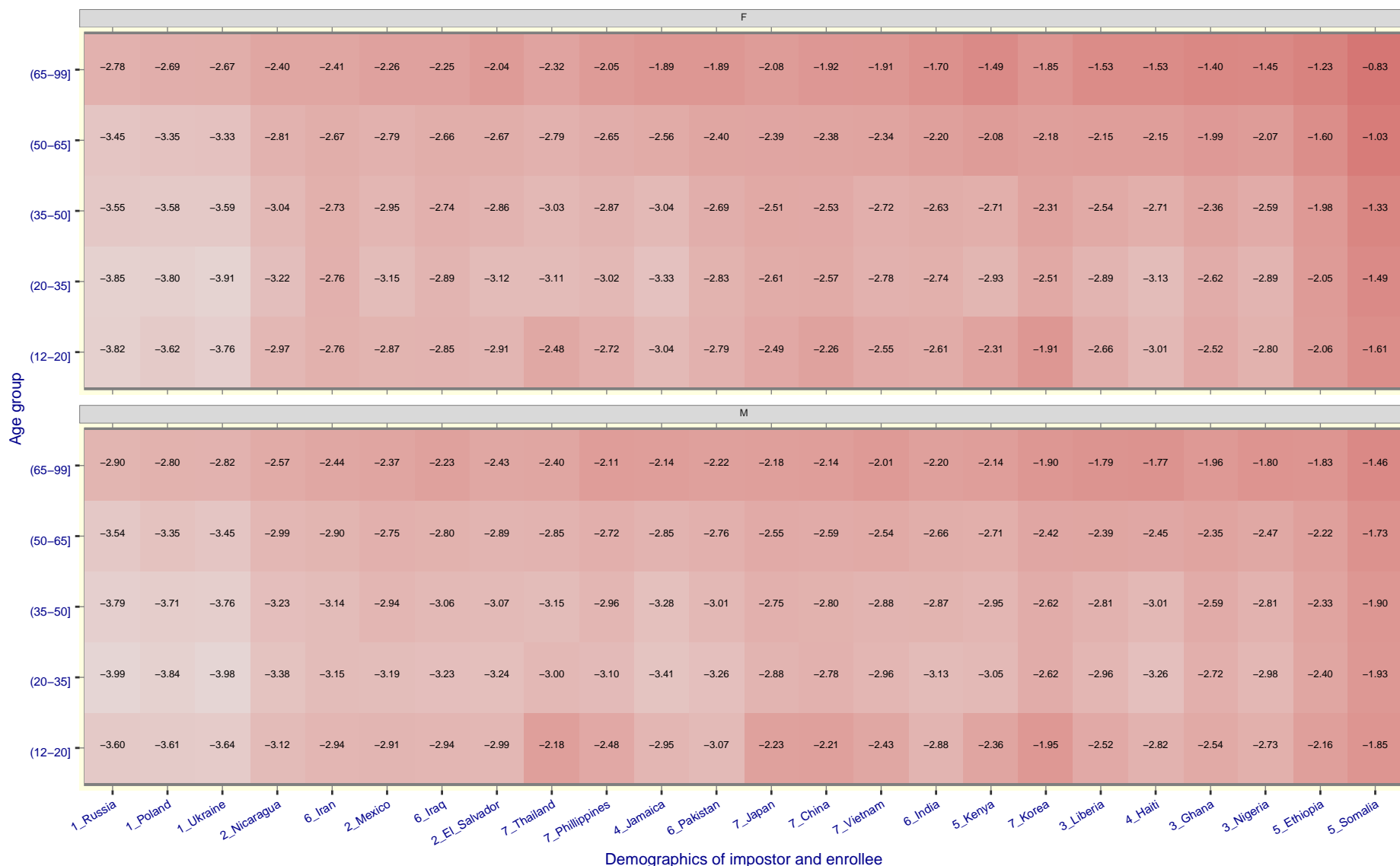
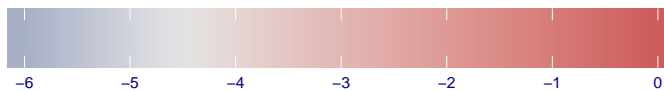




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ntechlab\_006.pdf

Algorithm: ntechlab\_006 Threshold: 2.007530 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

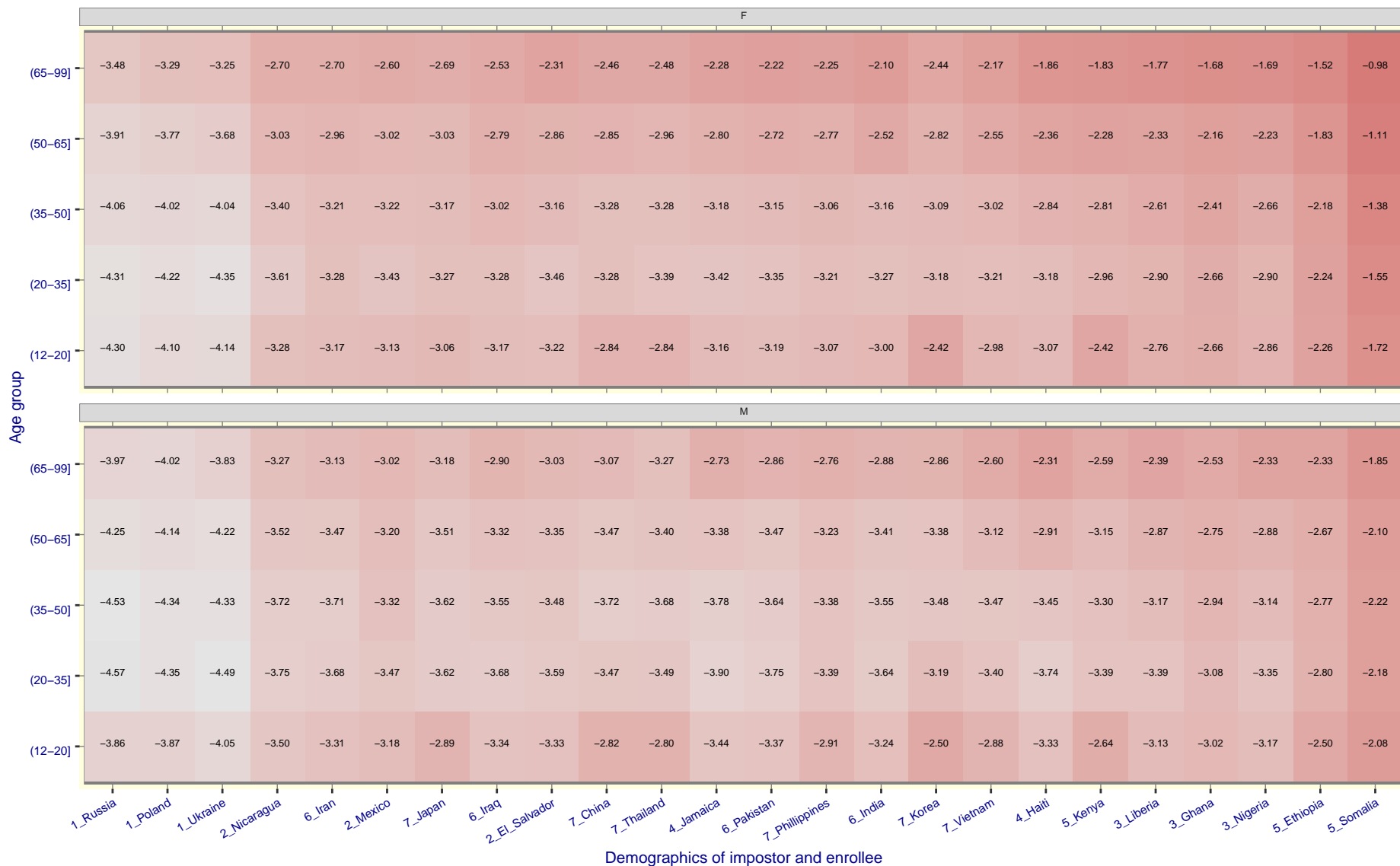
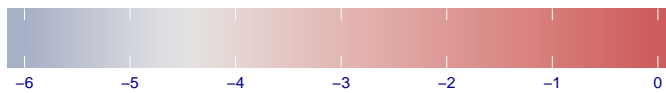


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ntechlab\_007.pdf

Algorithm: ntechlab\_007 Threshold: 1.484210 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

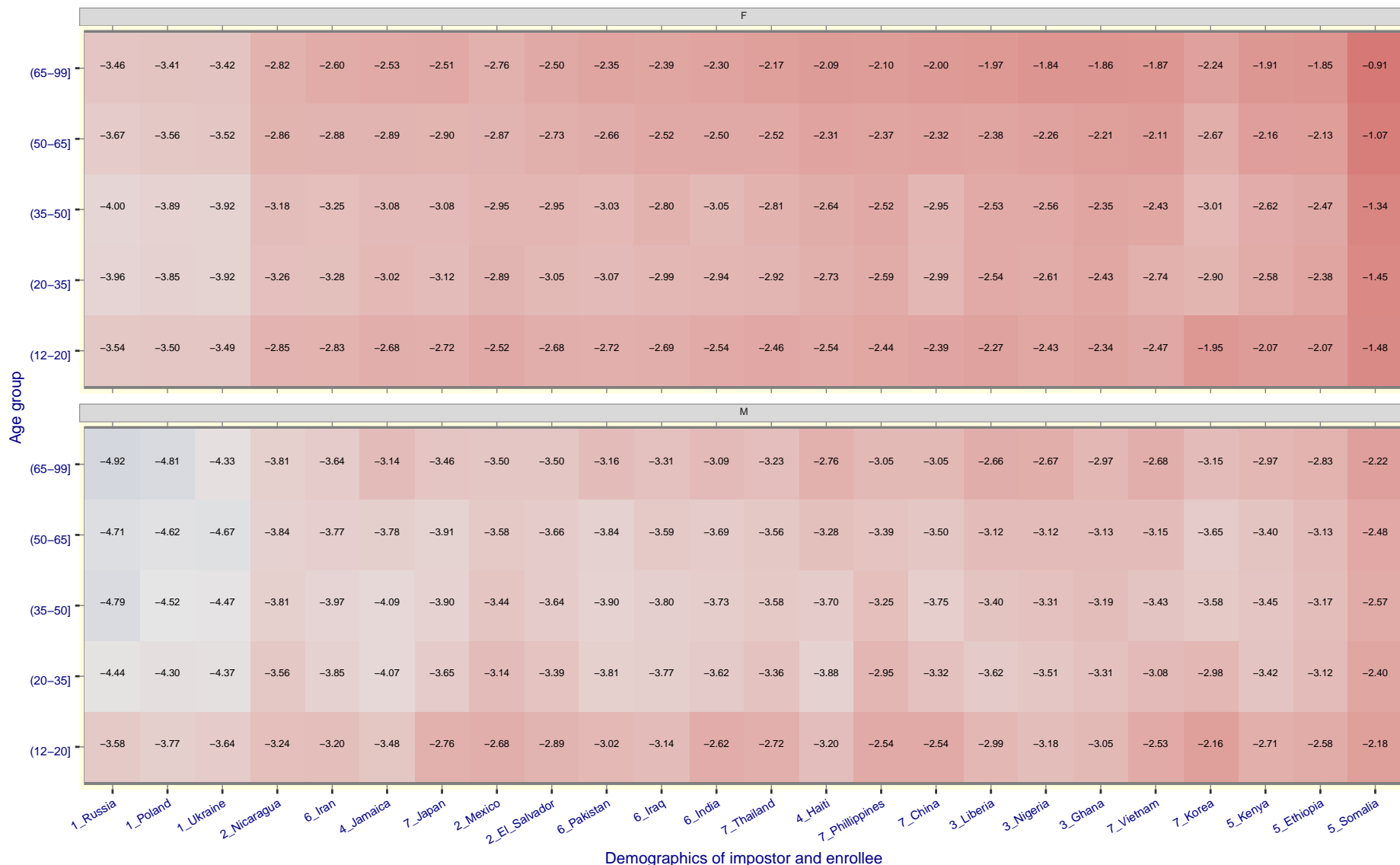
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/pixelall\_002.pdf

Algorithm: pixelall\_002 Threshold: 0.433355 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

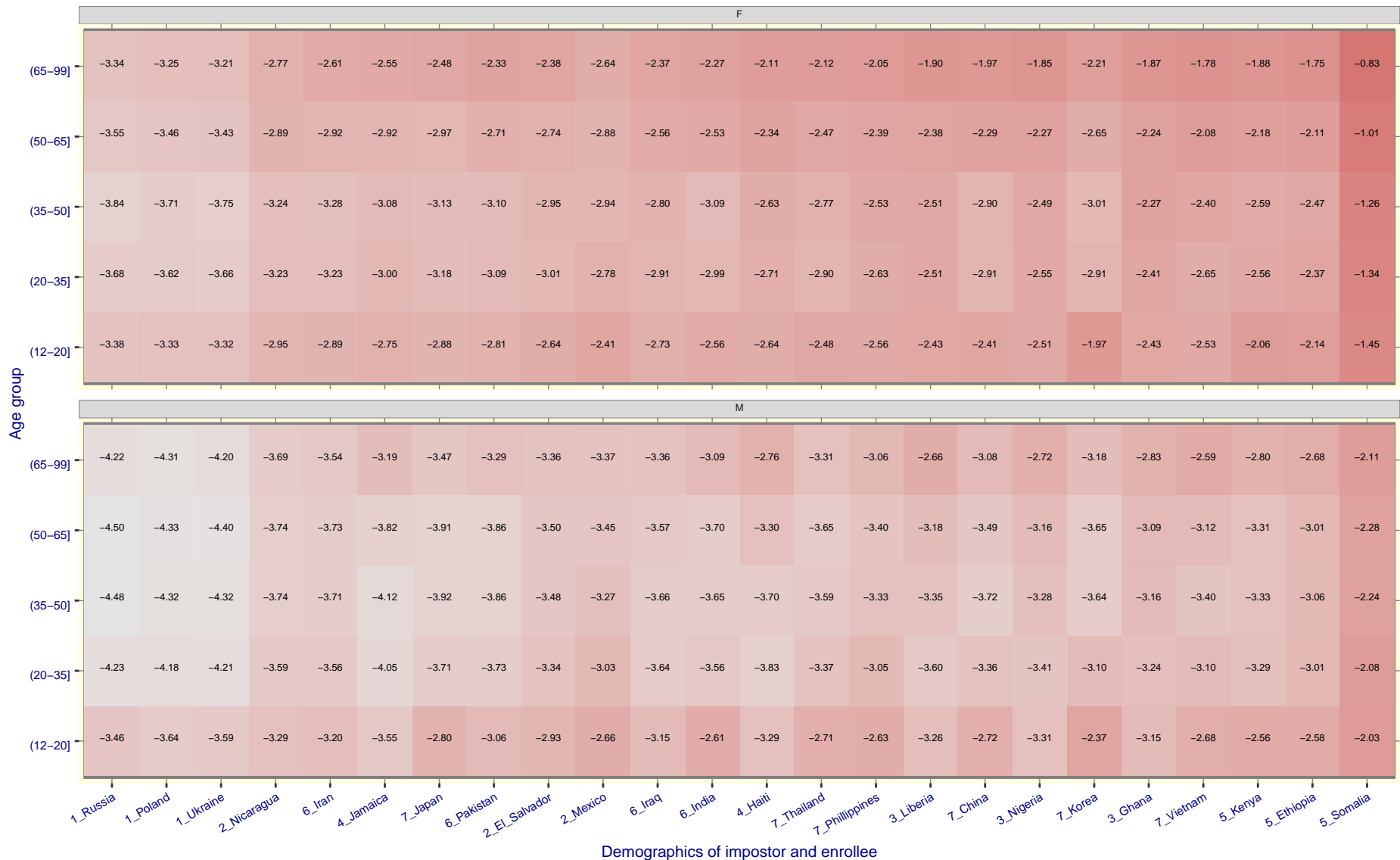
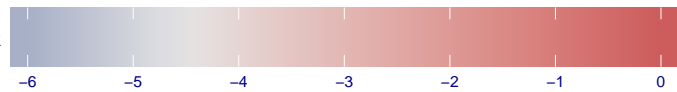


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/psl\_002.pdf

Algorithm: psl\_002 Threshold: 0.362384 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

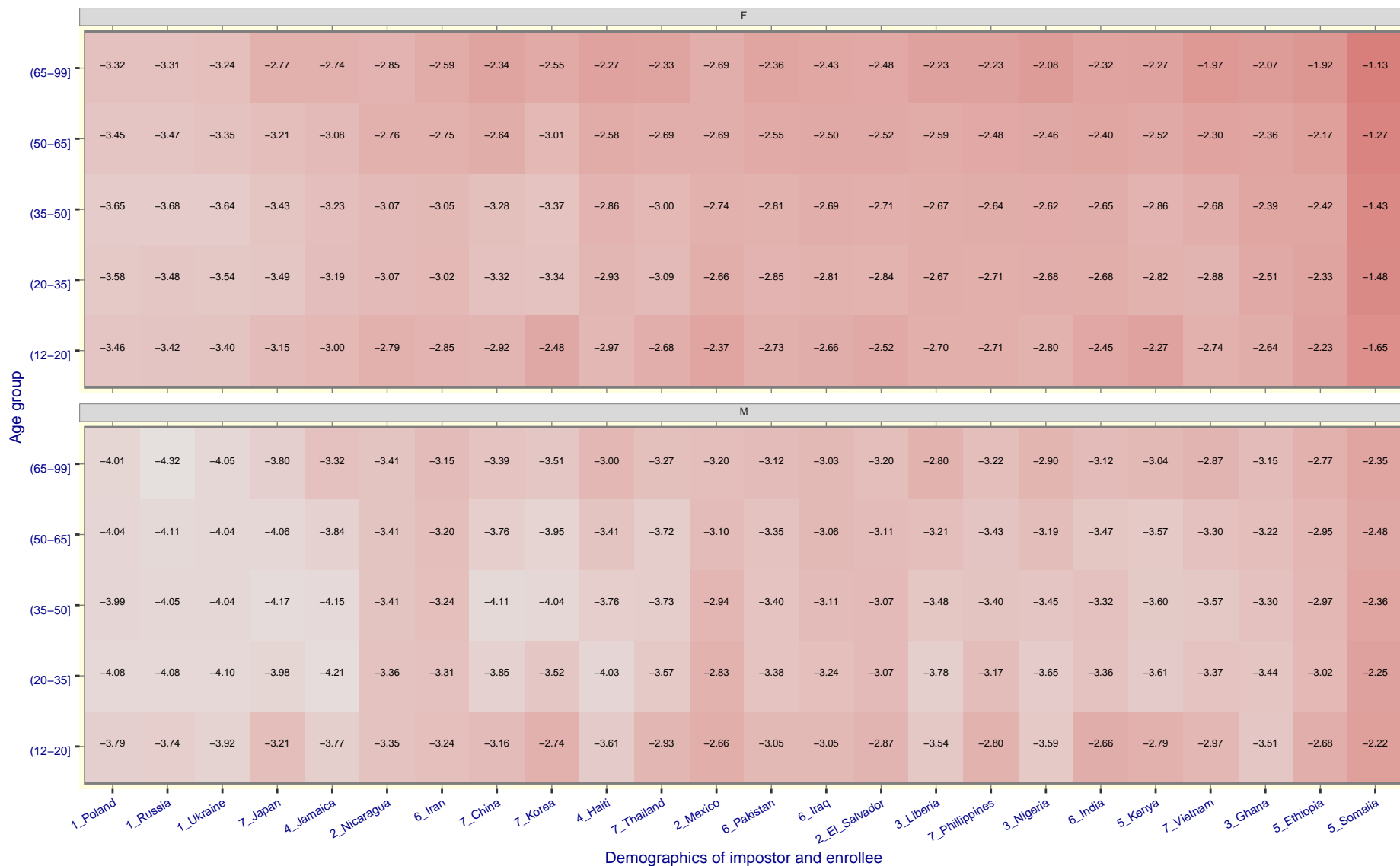
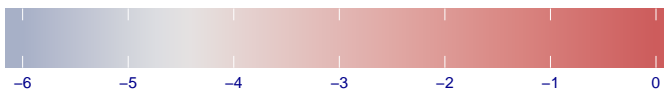


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/psl\_003.pdf

Algorithm: psl\_003 Threshold: 0.683114 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

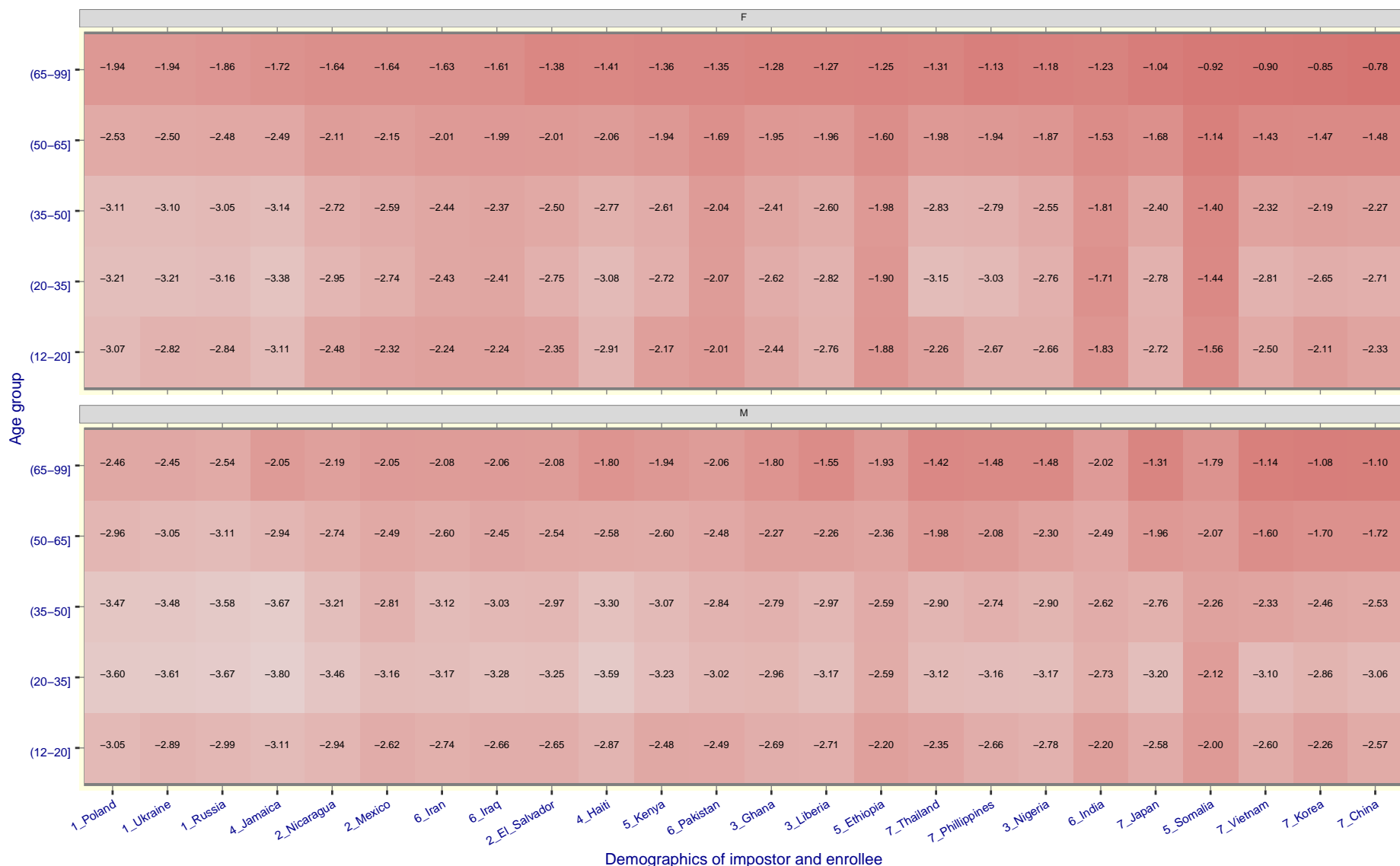
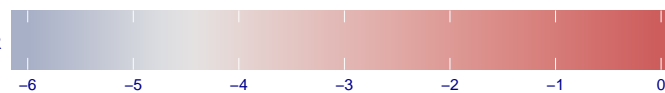
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/rankone\_006.pdf

Algorithm: rankone\_006 Threshold: 0.670241 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

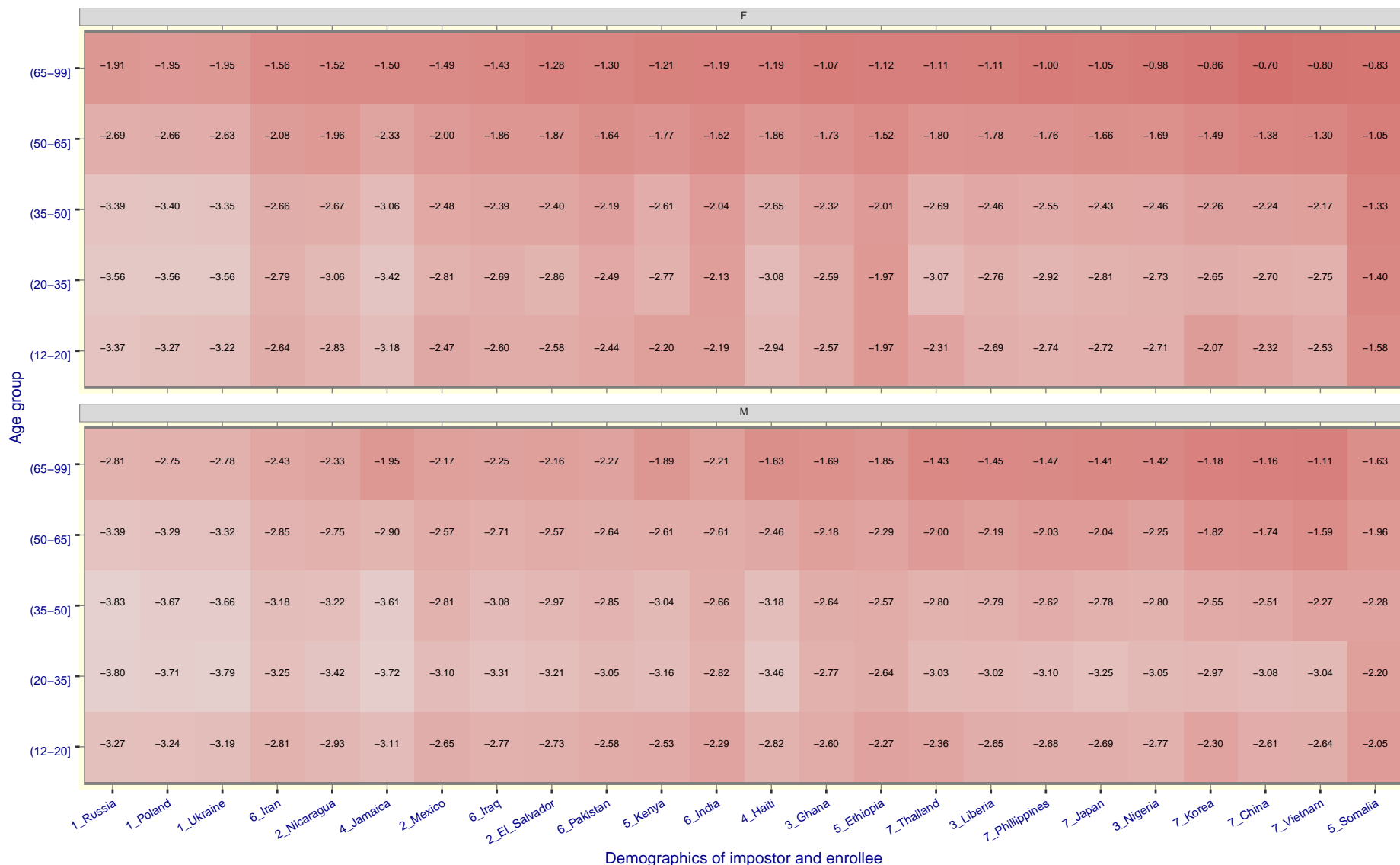
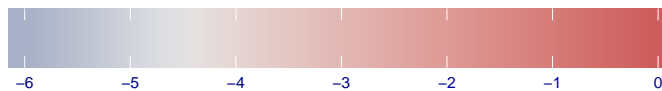
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/rankone\_007.pdf

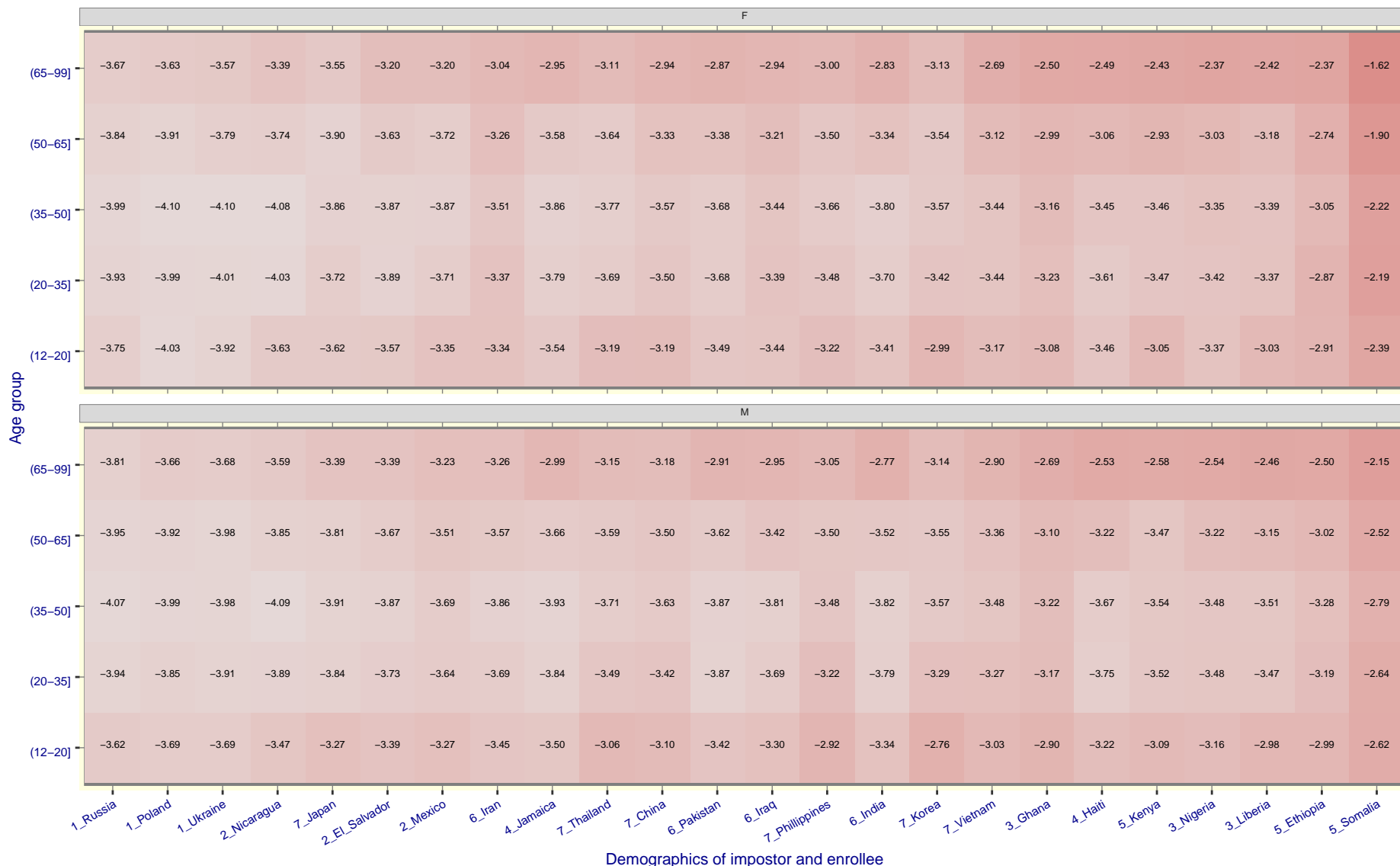
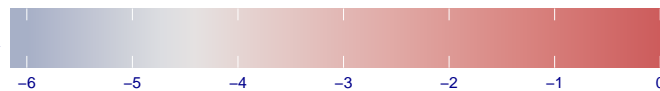
Algorithm: rankone\_007 Threshold: 0.598057 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/realnetworks\_002.pdf

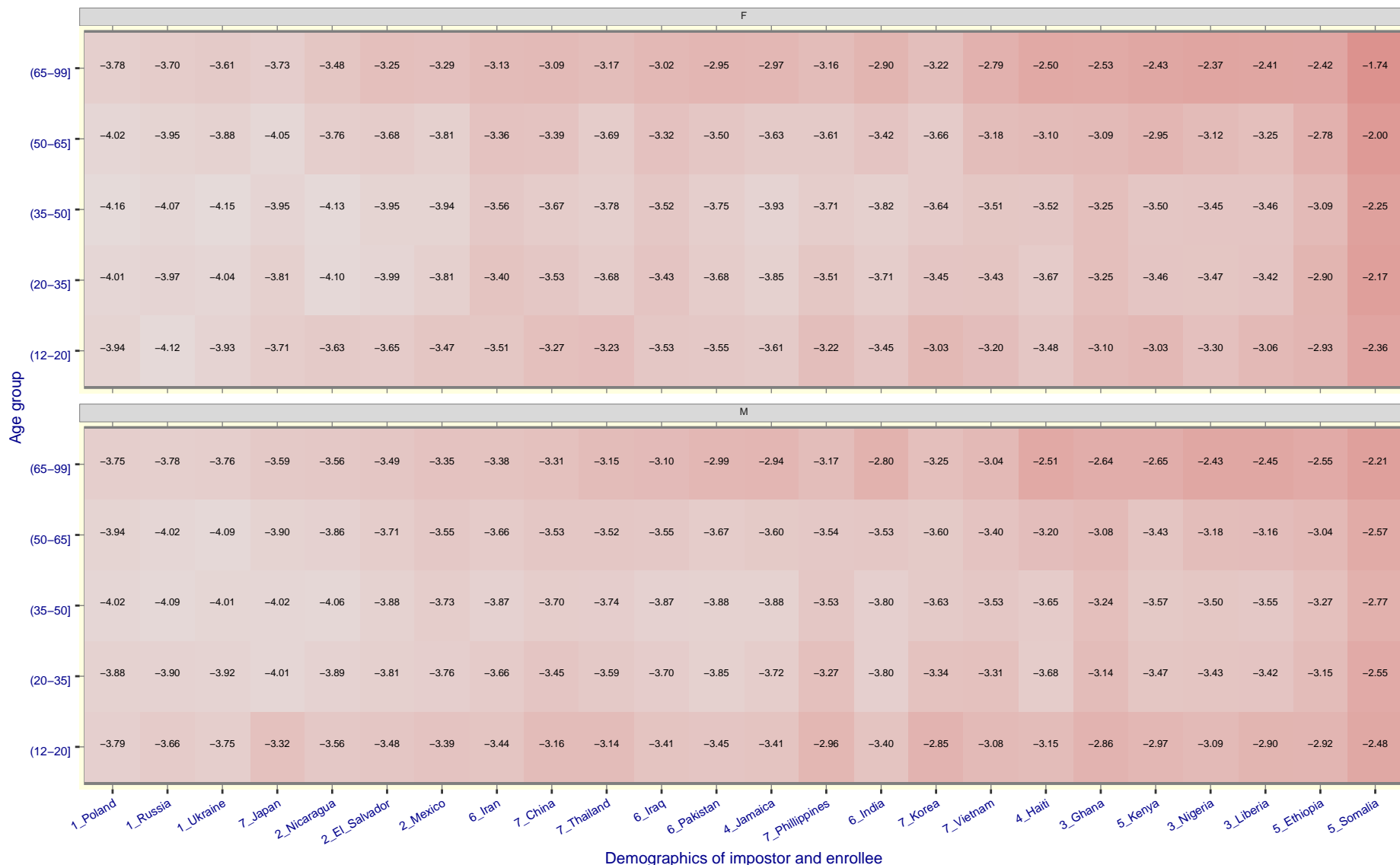
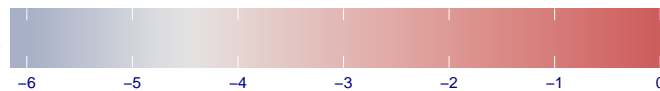
Algorithm: realnetworks\_002 Threshold: 0.955089 Dataset: Application Nominal FMR: 0.000030 log10 FMR





reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/realnetworks\_003.pdf

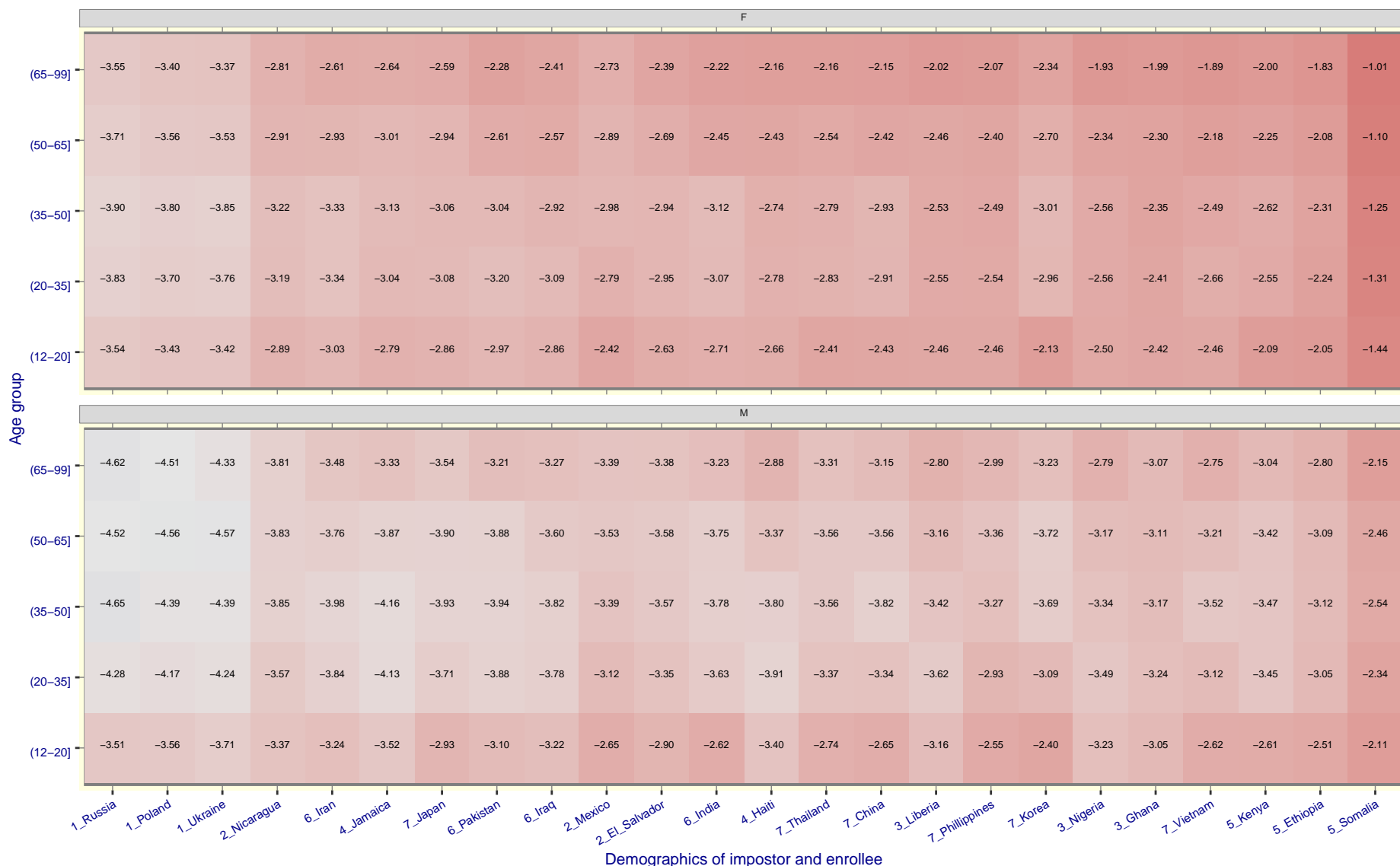
Algorithm: realnetworks\_003 Threshold: 0.960083 Dataset: Application Nominal FMR: 0.000030 log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/remarkai\_000.pdf

Algorithm: remarkai\_000 Threshold: 71.114972 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

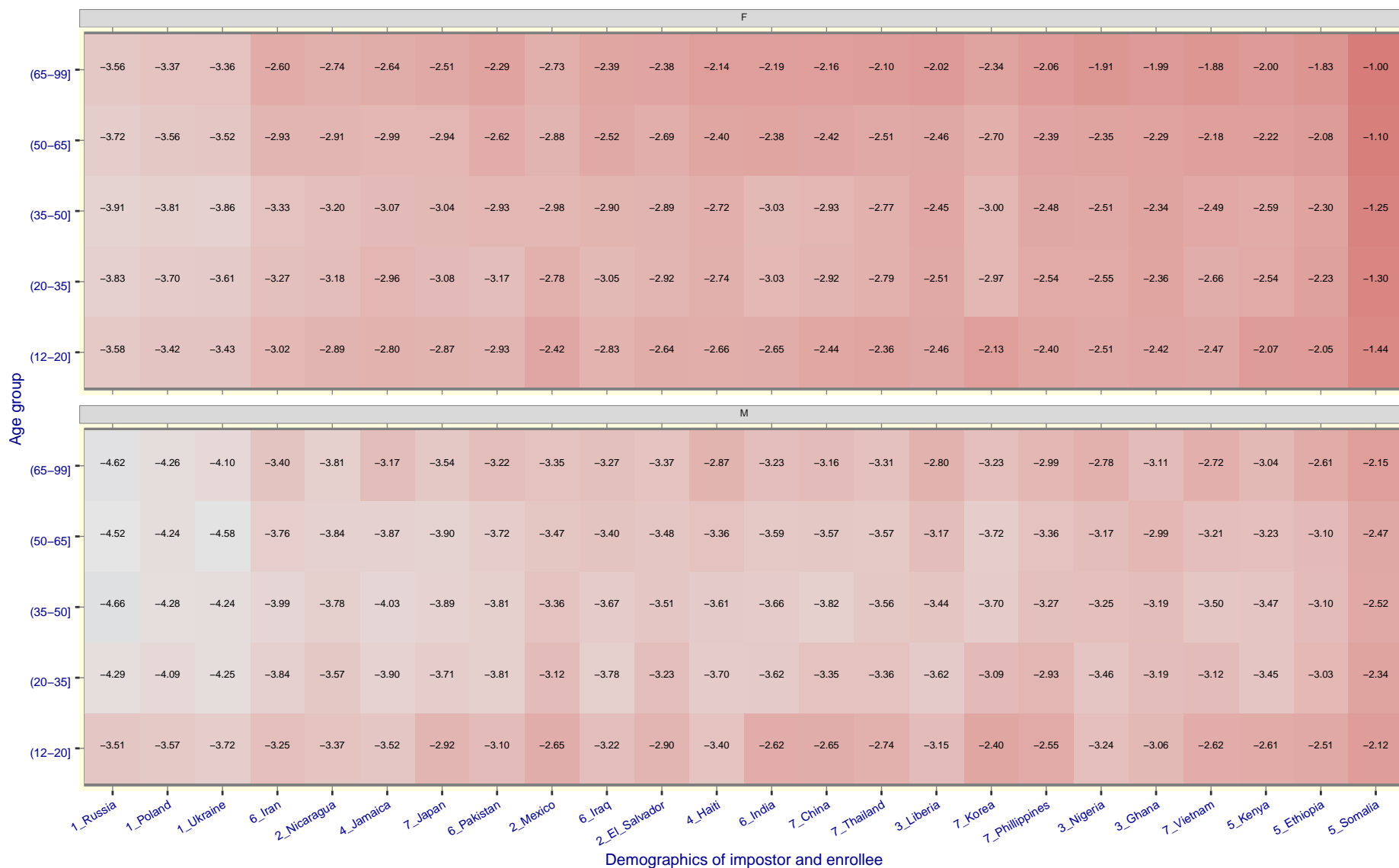
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/remarkai\_001.pdf

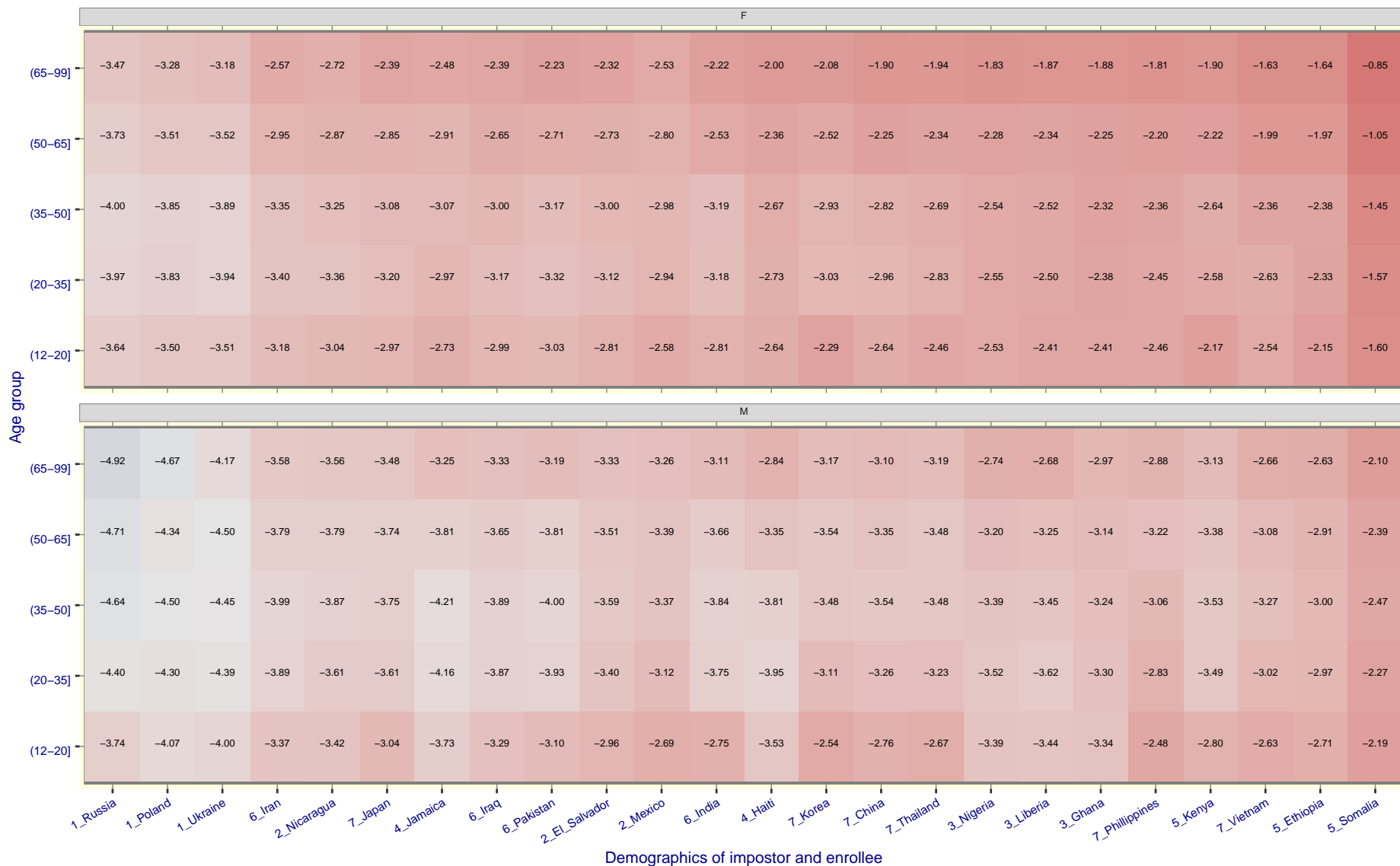
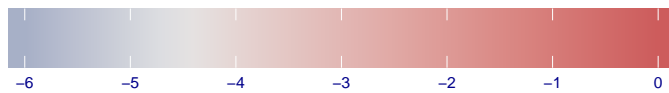
Algorithm: remarkai\_001 Threshold: 71.130032 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/rokid\_000.pdf

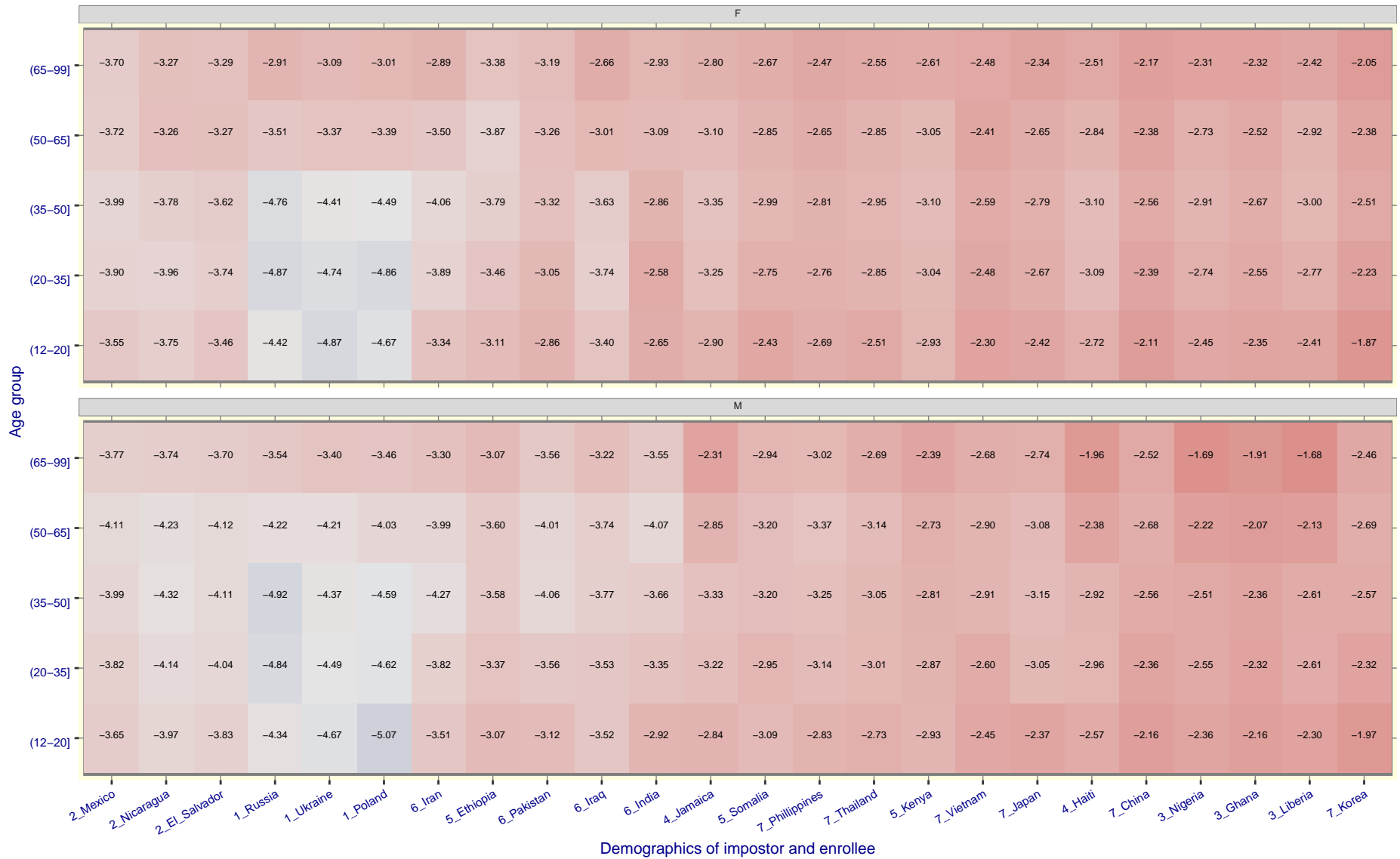
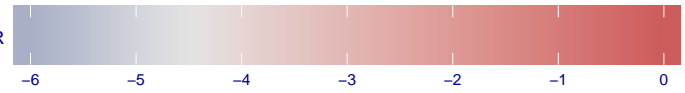
Algorithm: rokid\_000 Threshold: 0.679306 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/saffe\_001.pdf

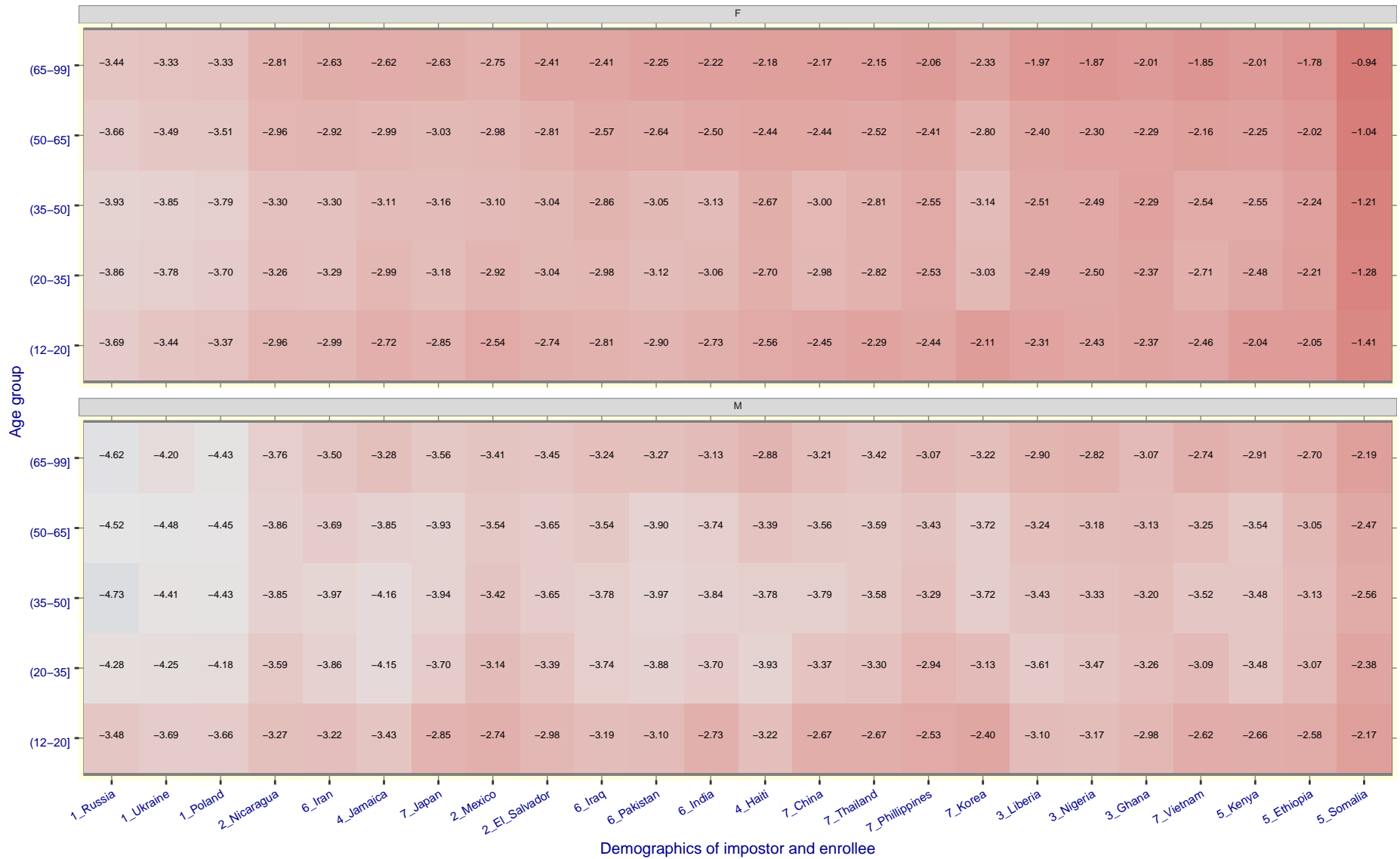
Algorithm: saffe\_001 Threshold: 0.690624 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/saffe\_002.pdf

Algorithm: saffe\_002 Threshold: 0.399964 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth

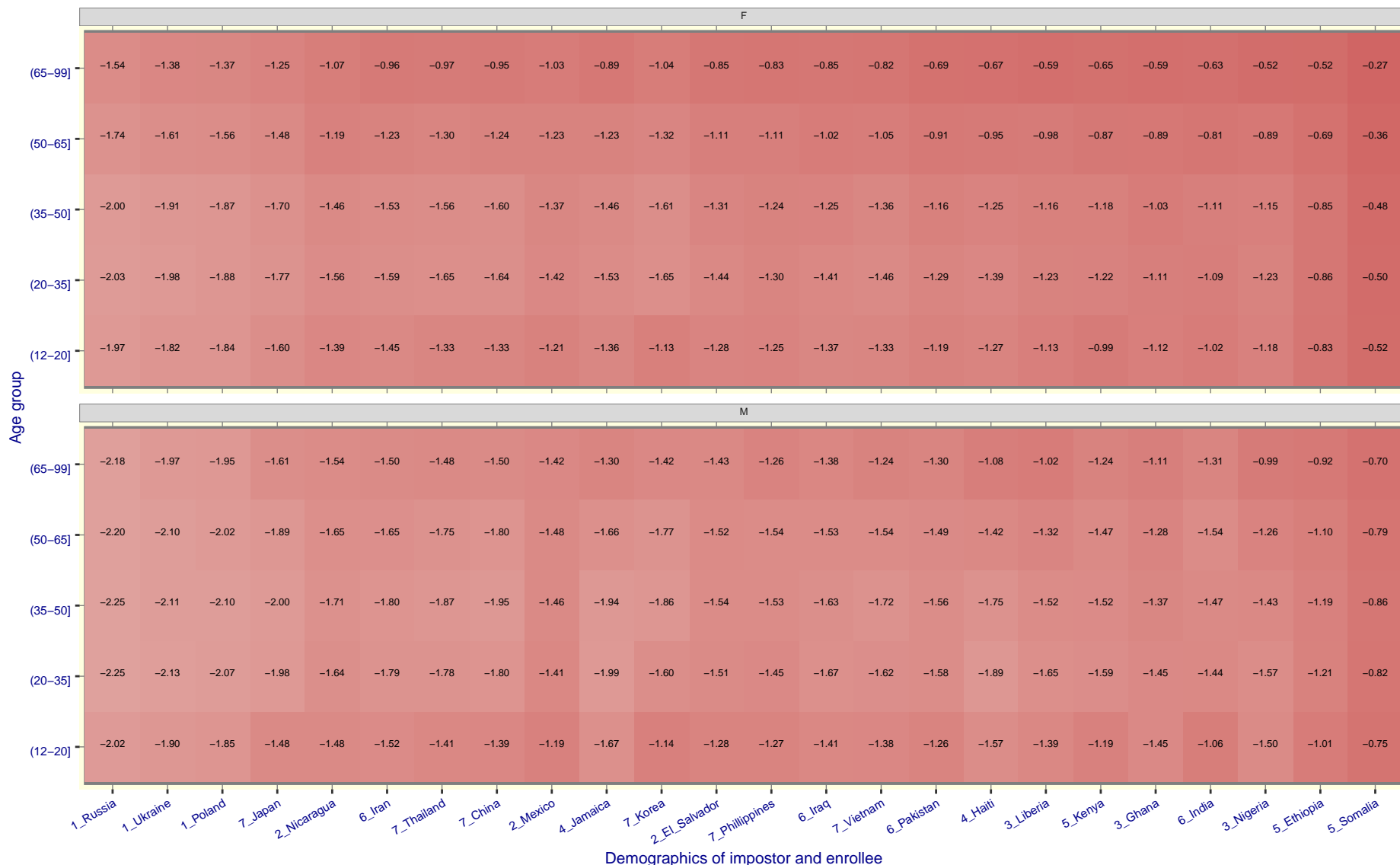
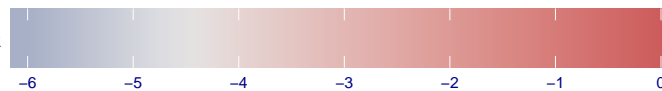


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/sensetime\_001.pdf

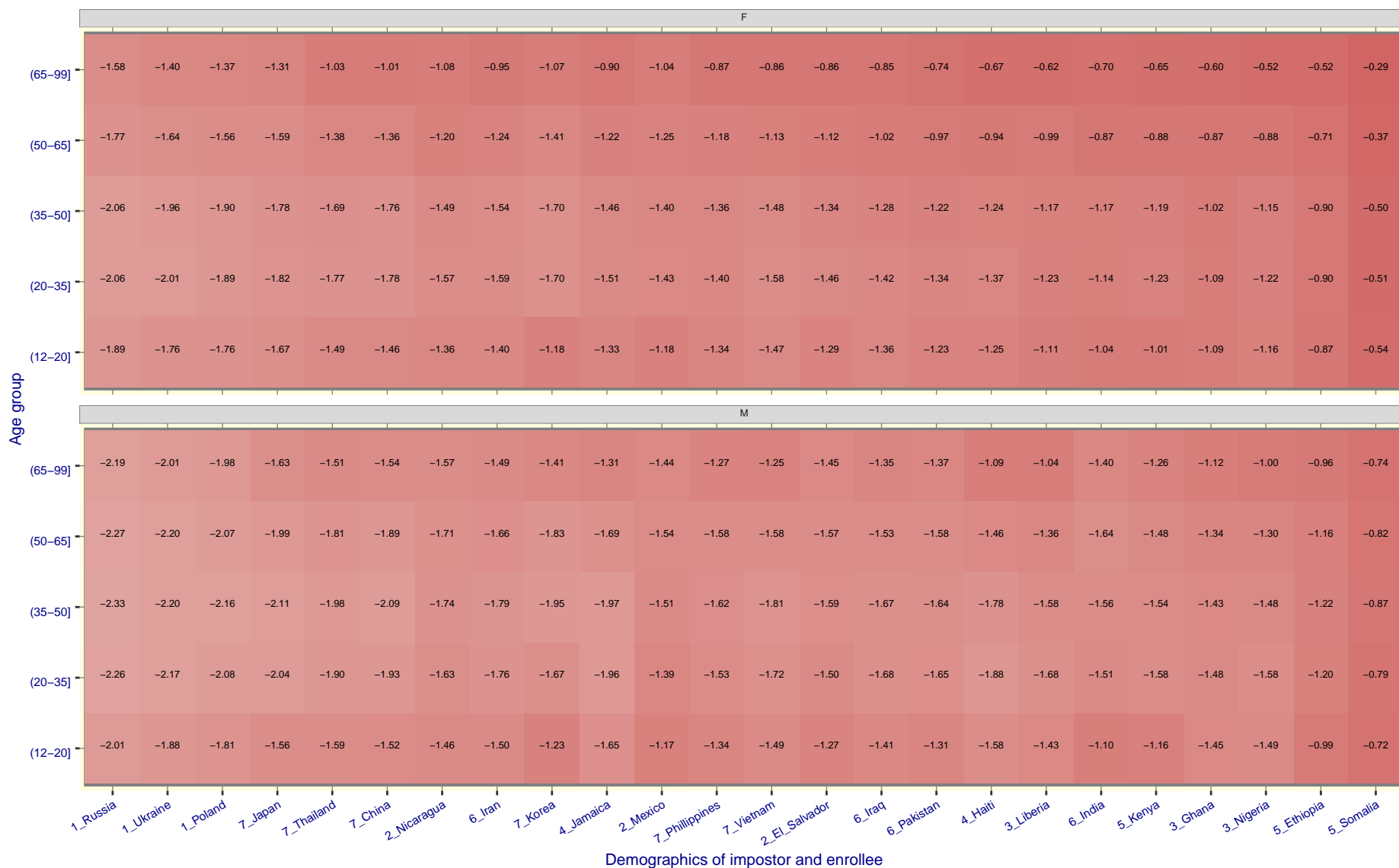
Algorithm: sensetime\_001 Threshold: 0.361773 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/sensetime\_002.pdf

Algorithm: sensetime\_002 Threshold: 0.362871 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

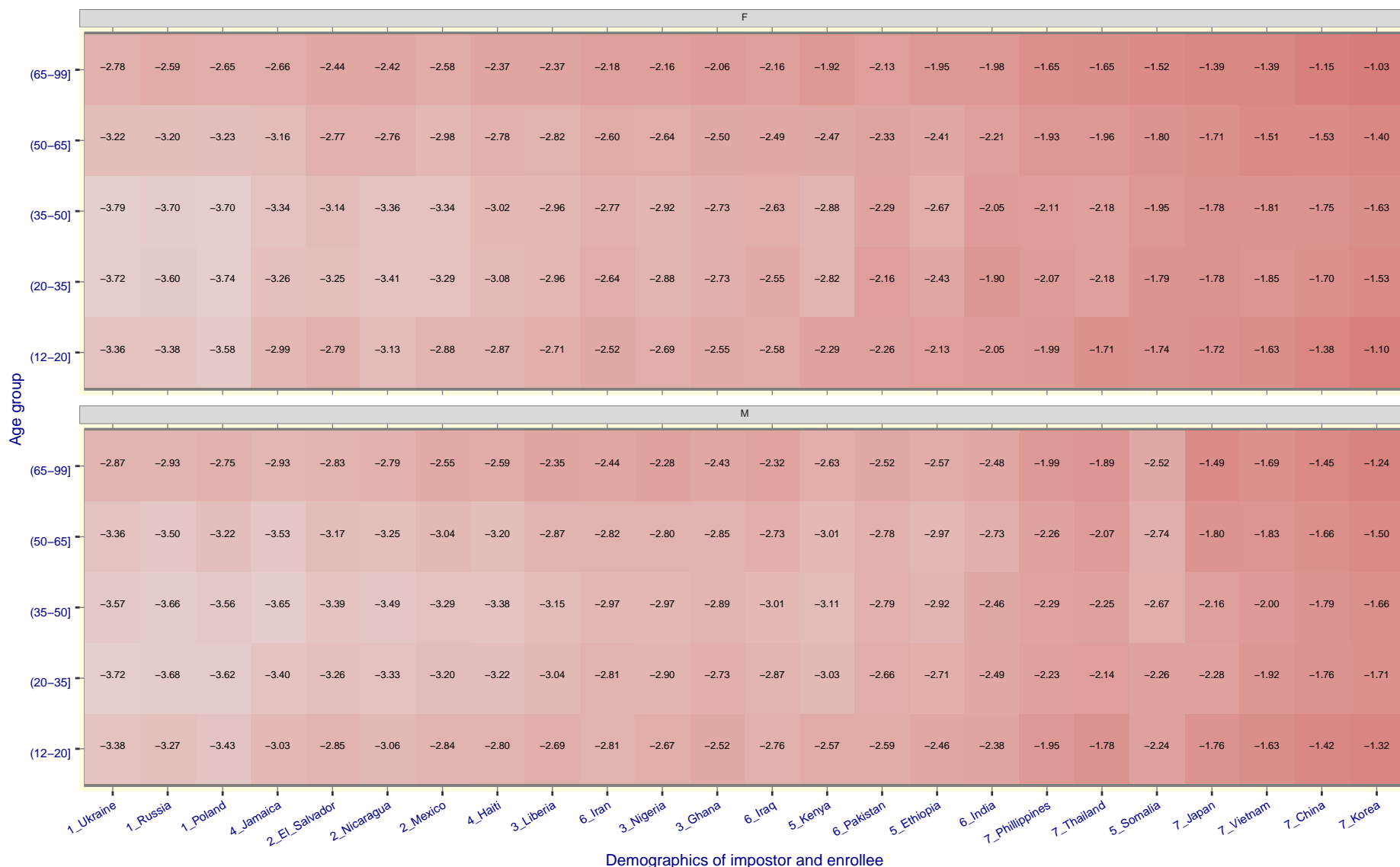
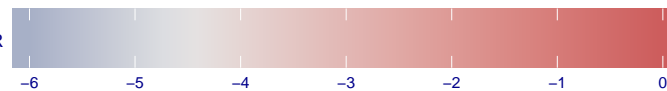




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/shaman\_001.pdf

Algorithm: shaman\_001 Threshold: 0.614174 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

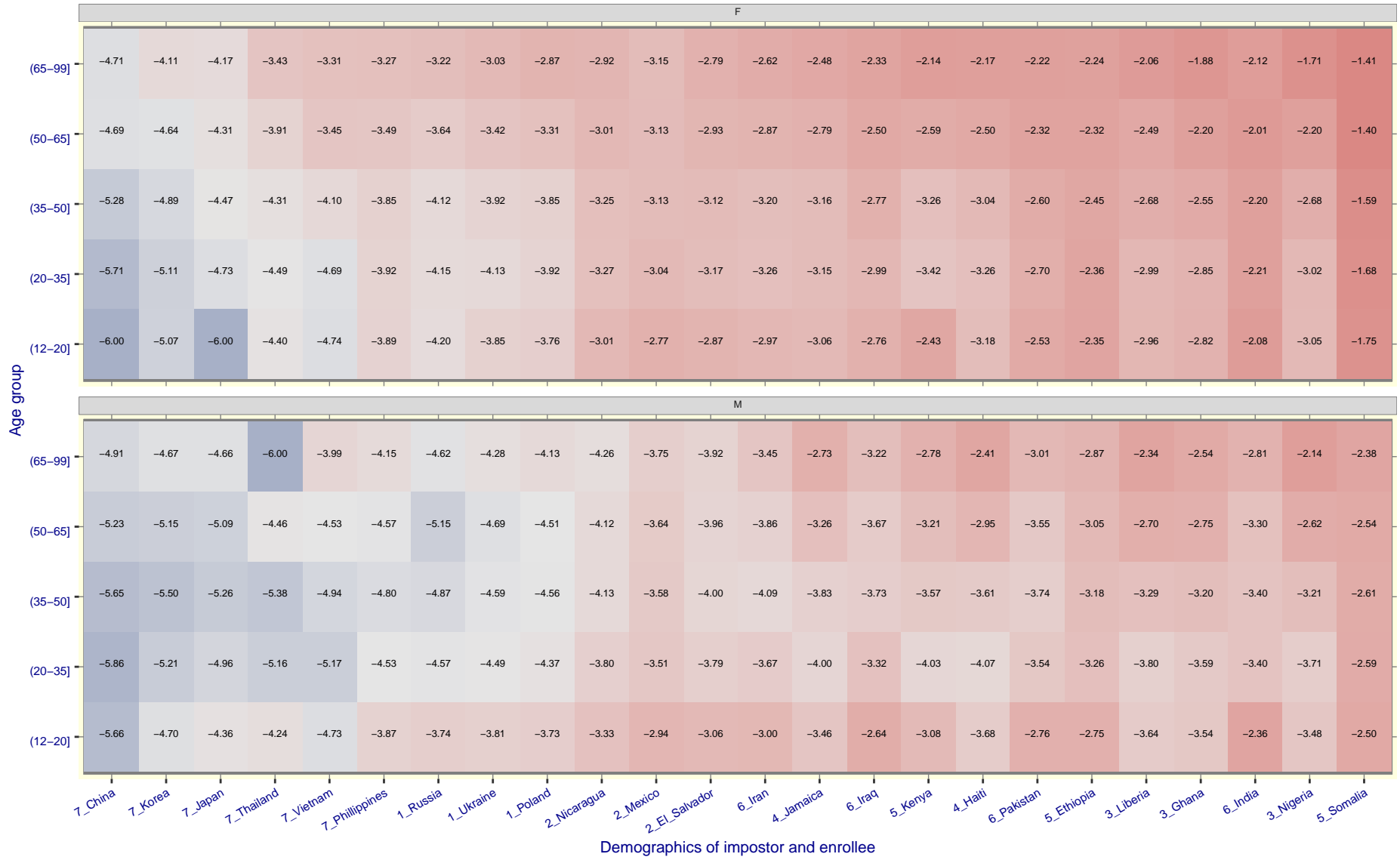
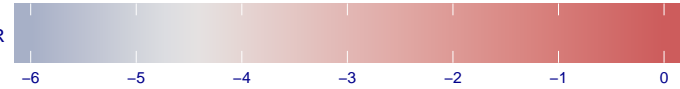
log10 FMR



Demographics of impostor and enrollee

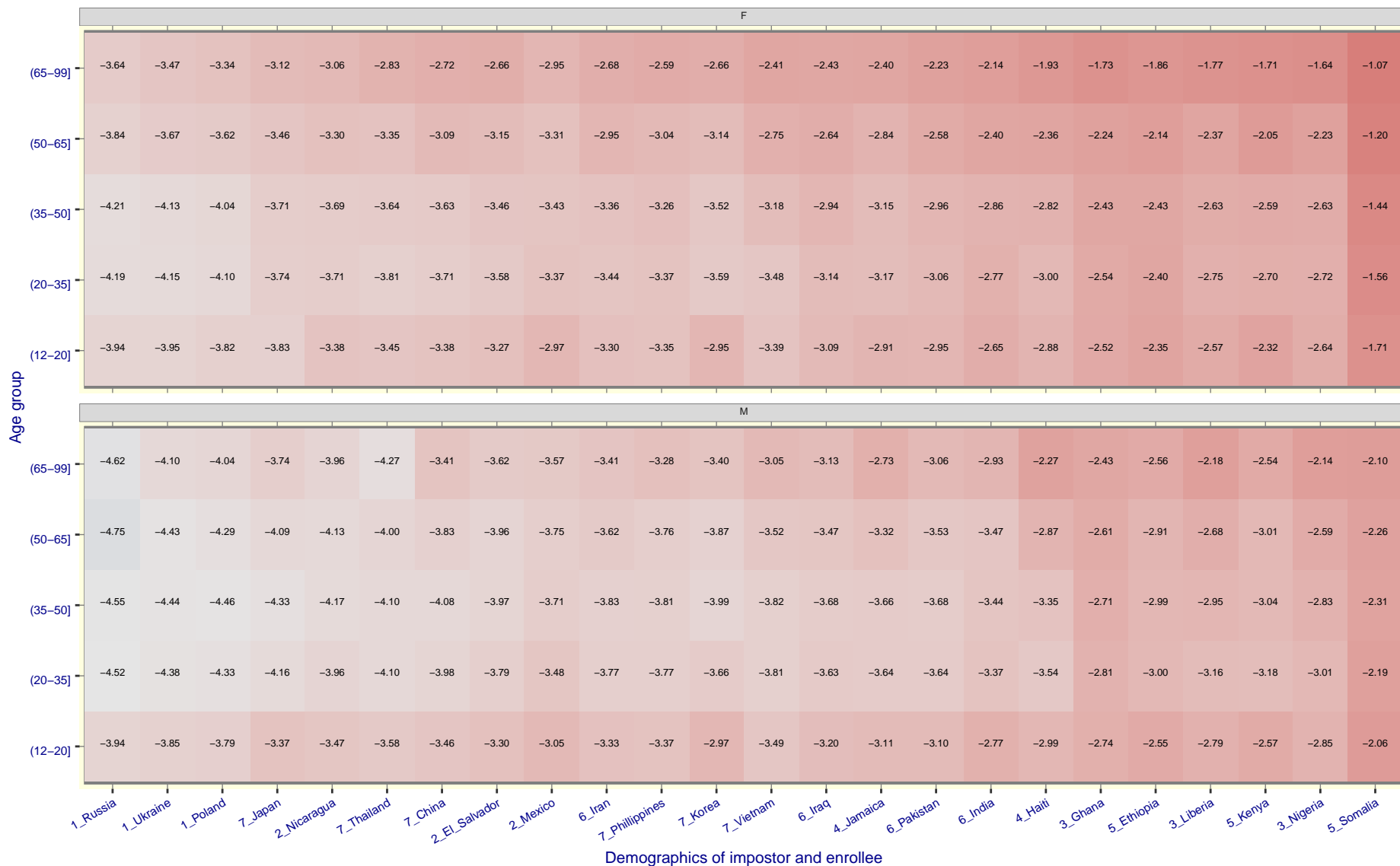
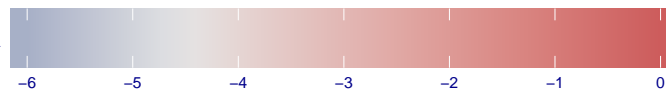
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/shu\_001.pdf

Algorithm: shu\_001 Threshold: 0.467849 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



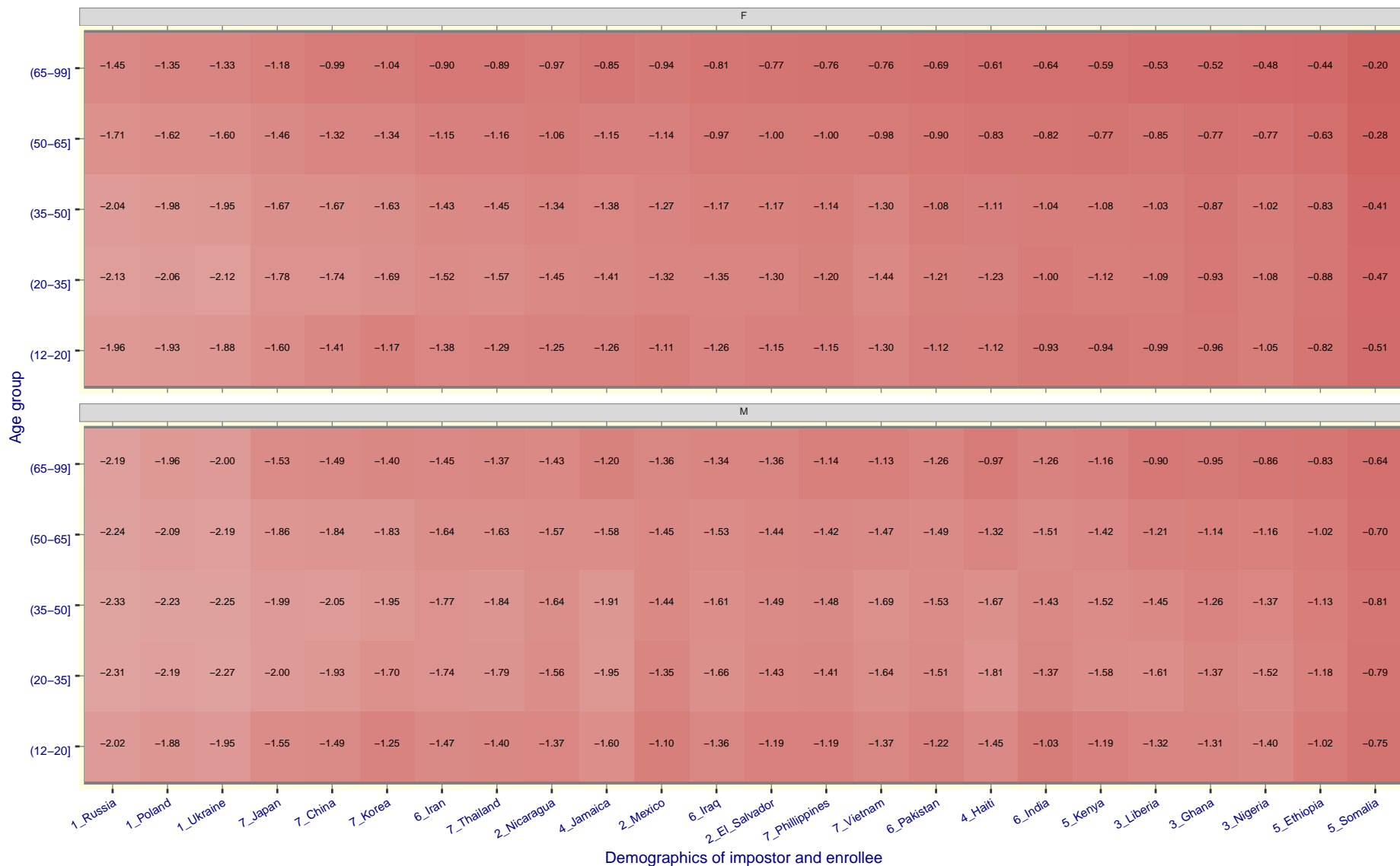
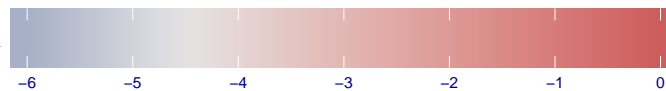
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/siat\_002.pdf

Algorithm: siat\_002 Threshold: 0.450193 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/siat\_004.pdf

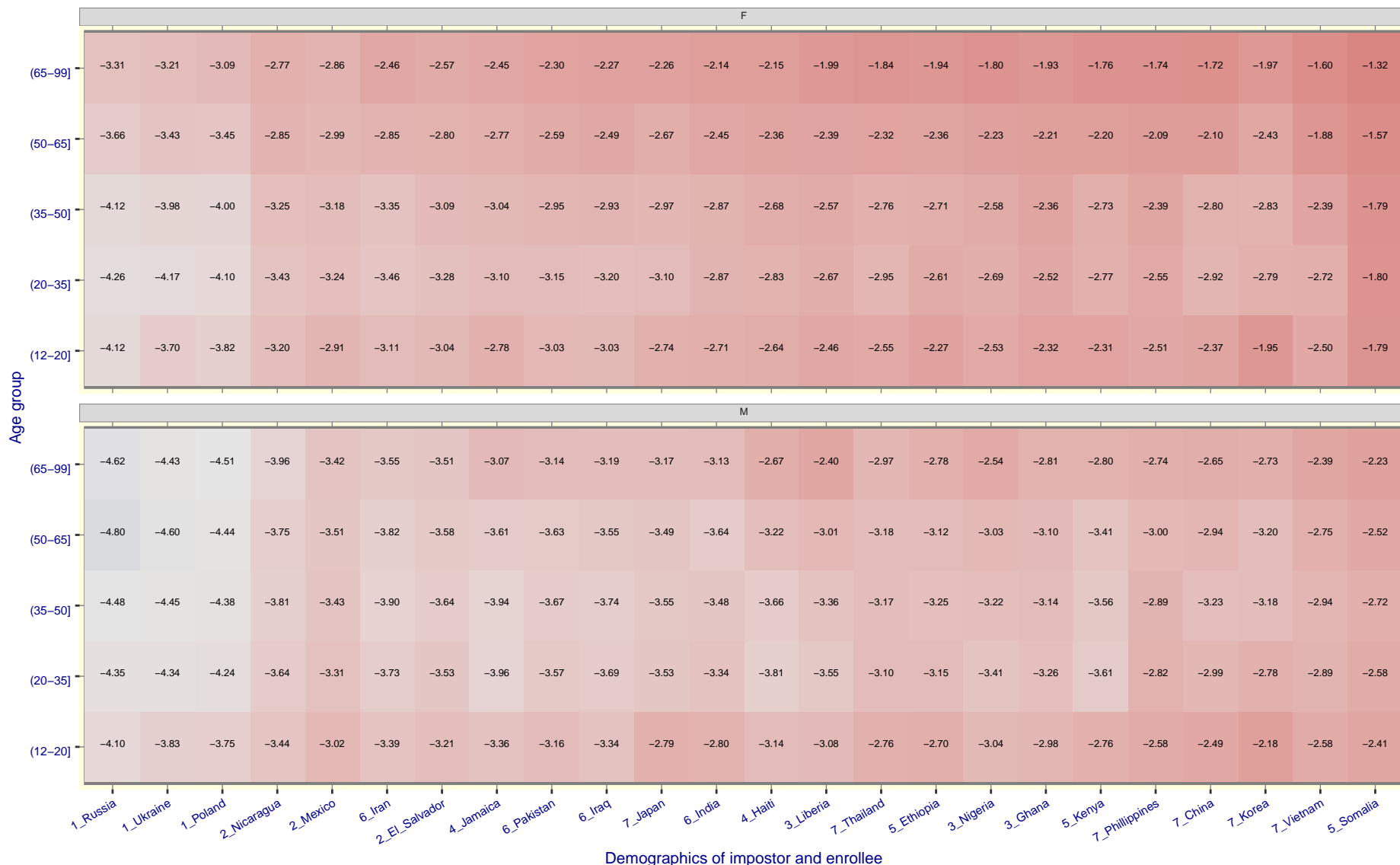
Algorithm: siat\_004 Threshold: 0.363534 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/smlart\_003.pdf

Algorithm: smlart\_003 Threshold: 0.488620 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

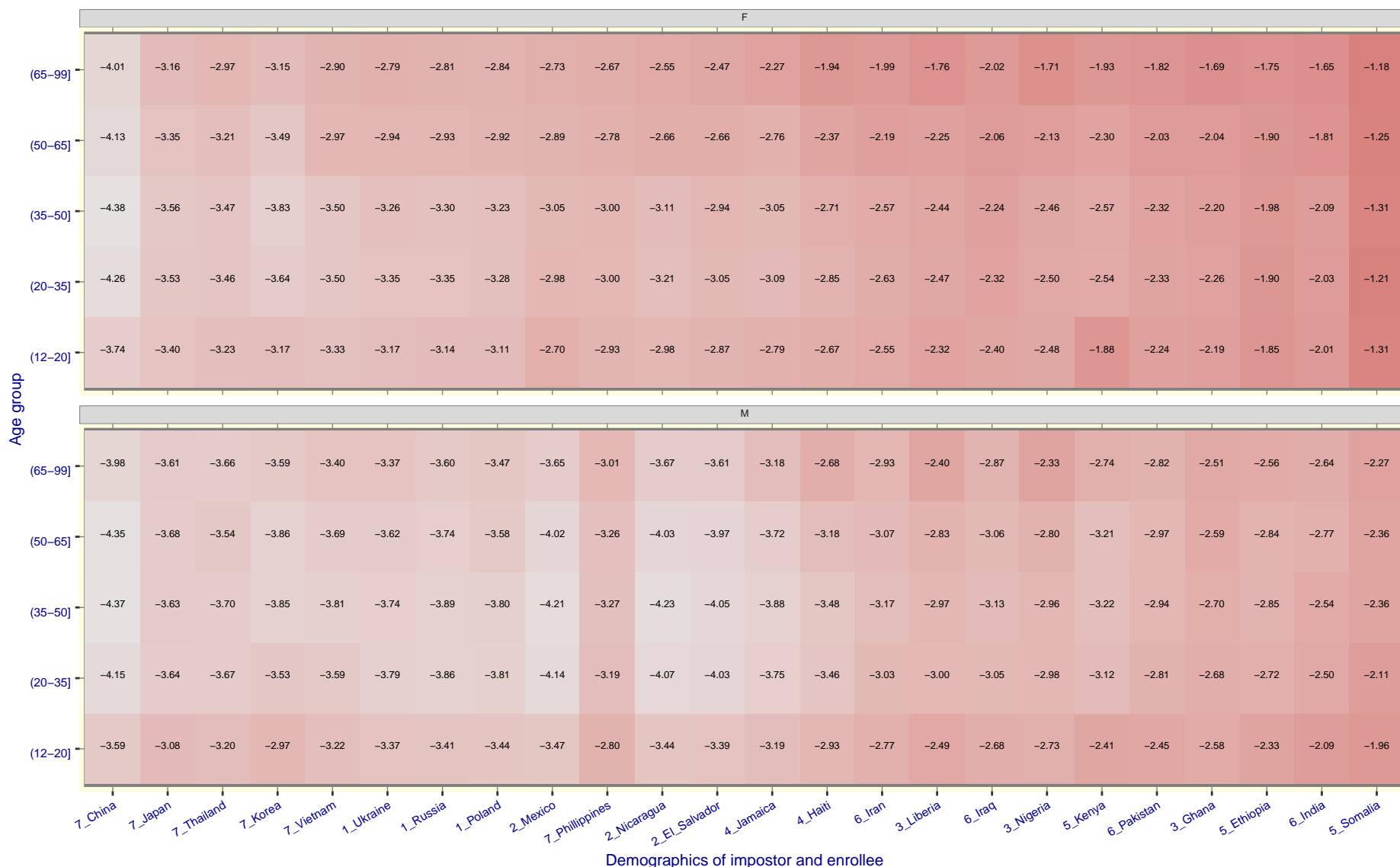


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/starhybrid\_001.pdf

Algorithm: starhybrid\_001 Threshold: 0.321459 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

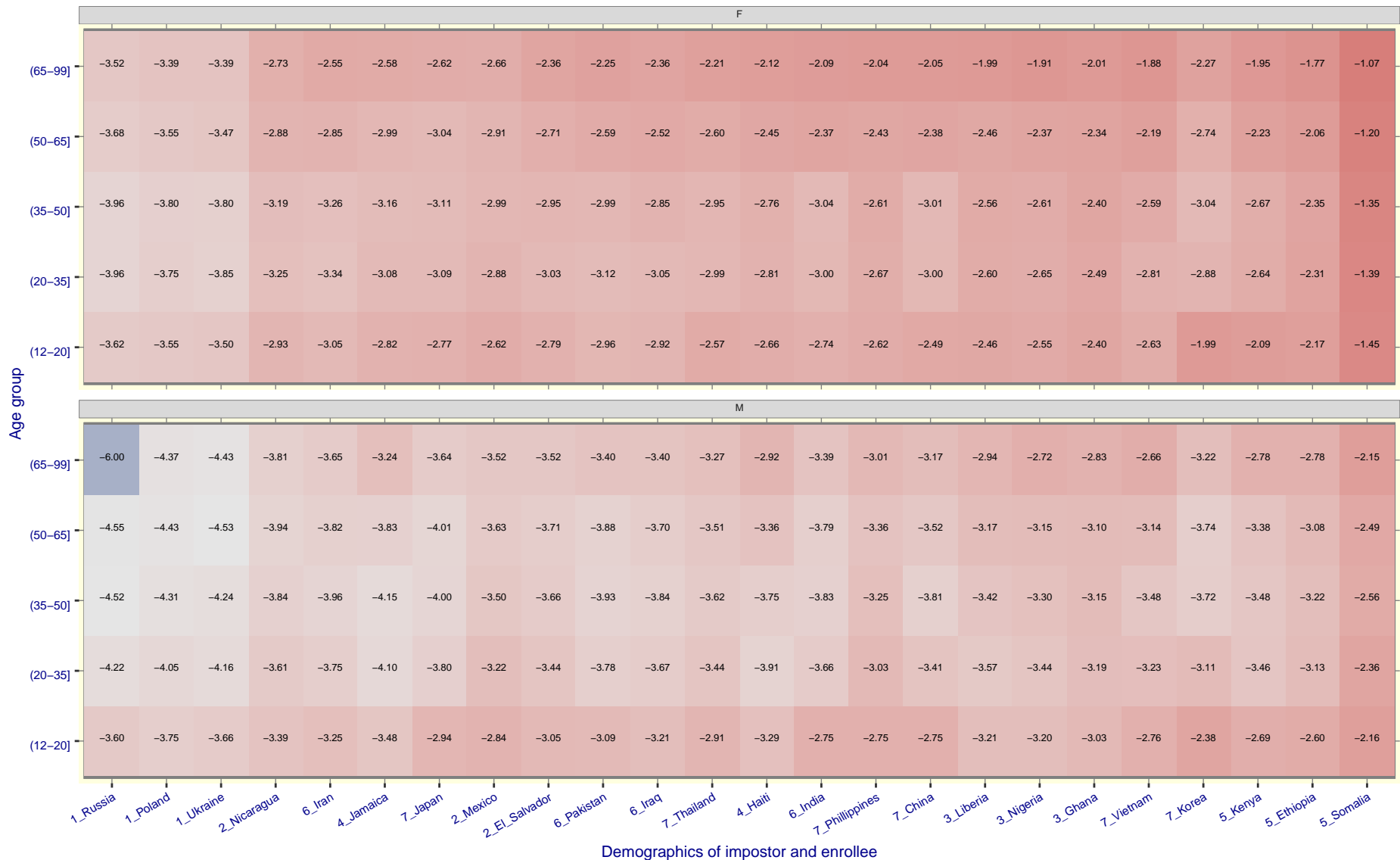
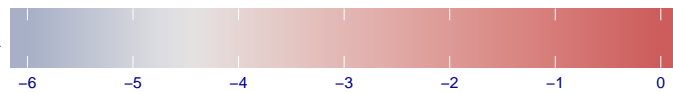
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/synesis\_004.pdf

Algorithm: synesis\_004 Threshold: 0.246430 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

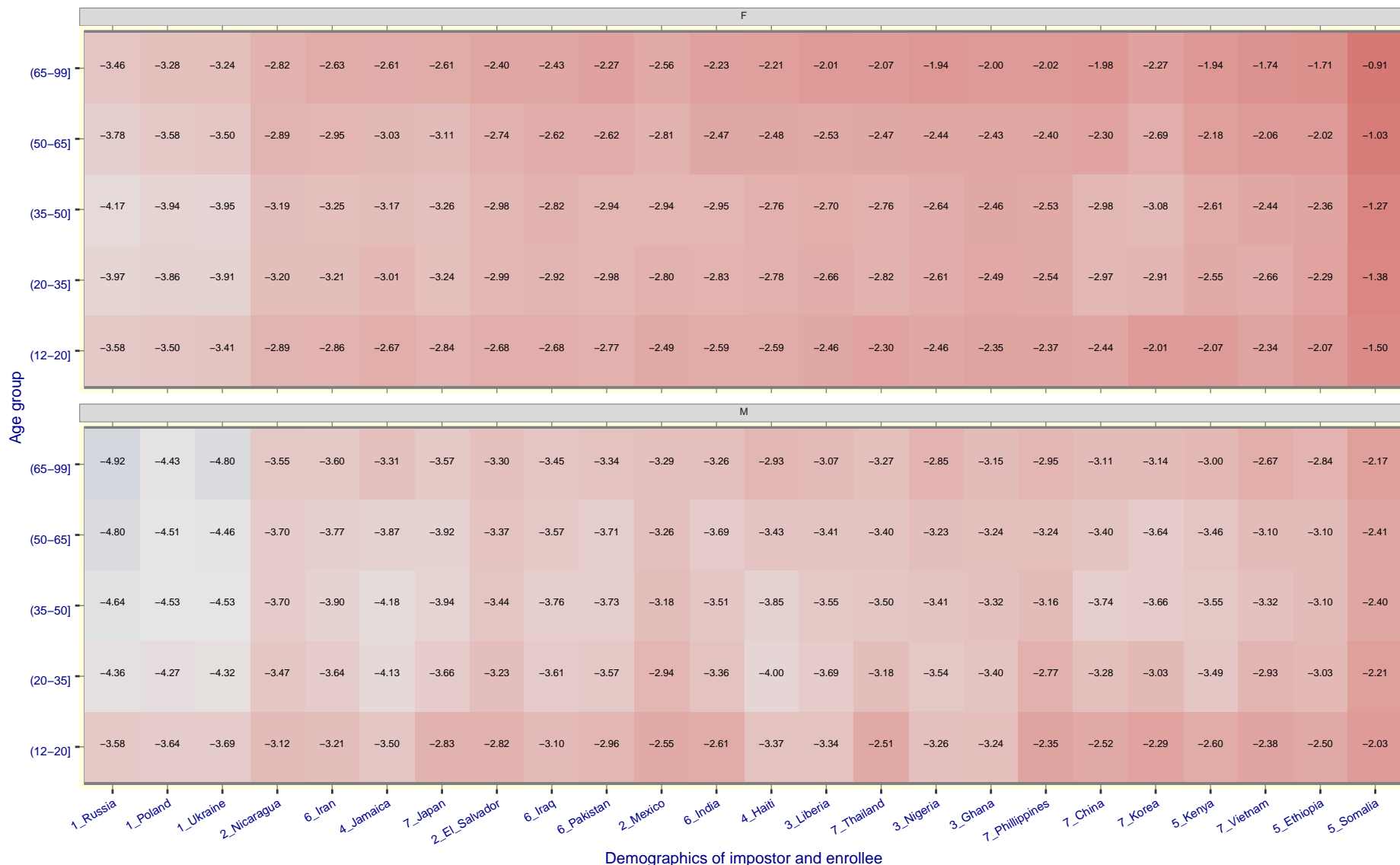
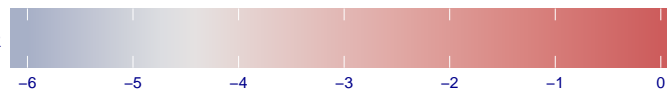
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/synesis\_005.pdf

Algorithm: synesis\_005 Threshold: 0.382779 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

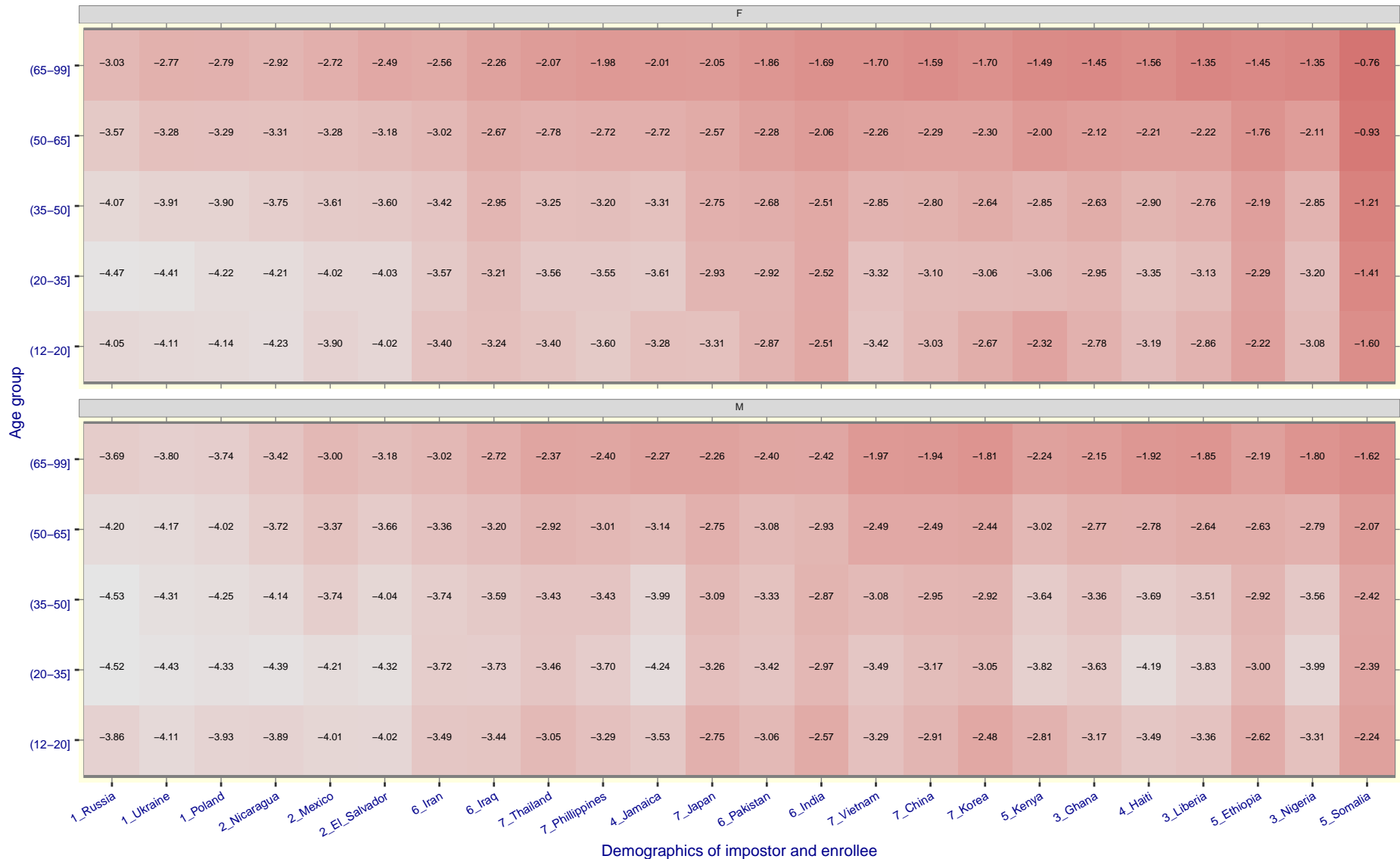




reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/tech5\_002.pdf

Algorithm: tech5\_002 Threshold: 147.833000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

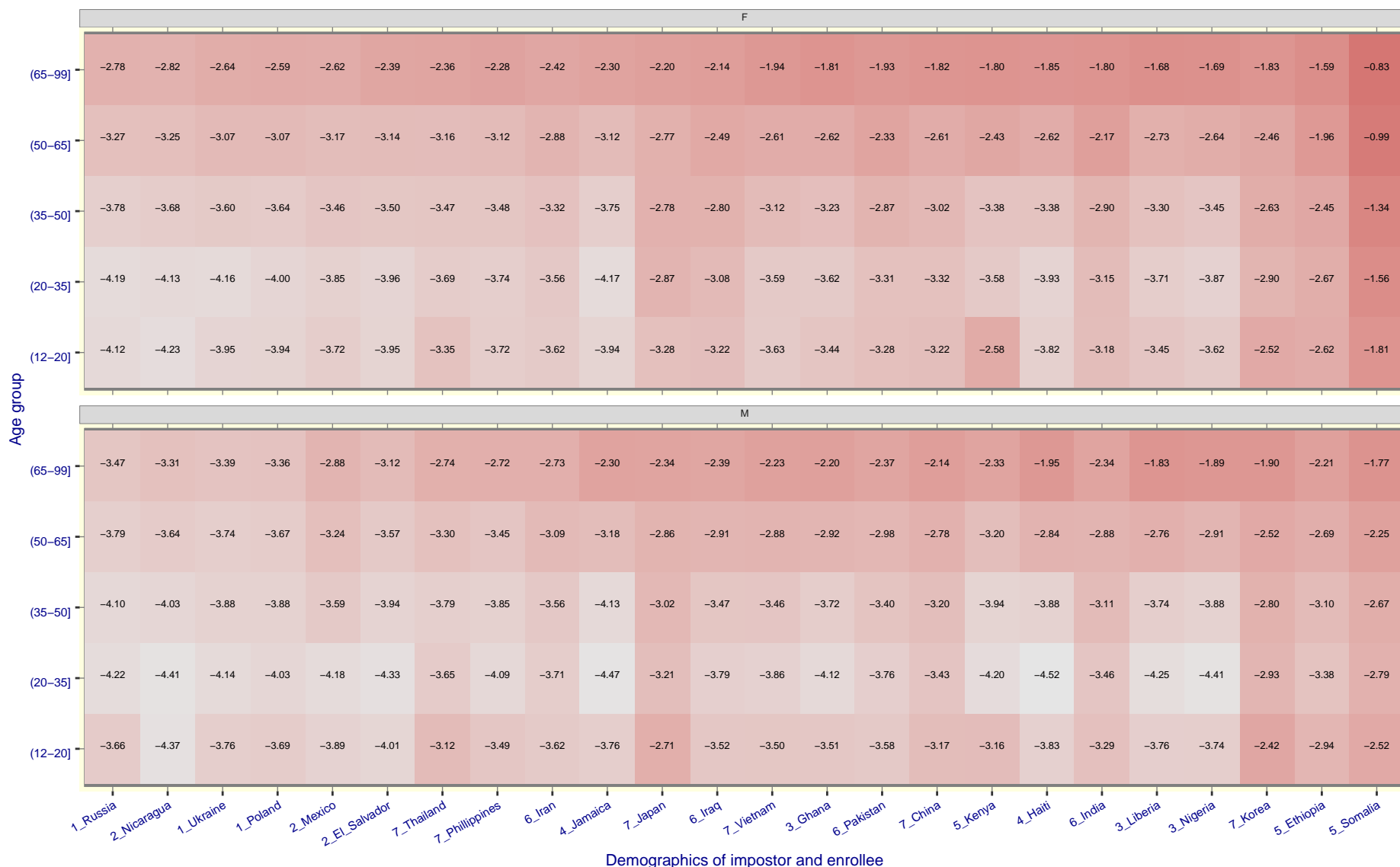
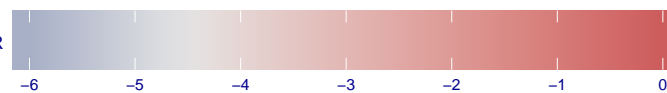


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/tech5\_003.pdf

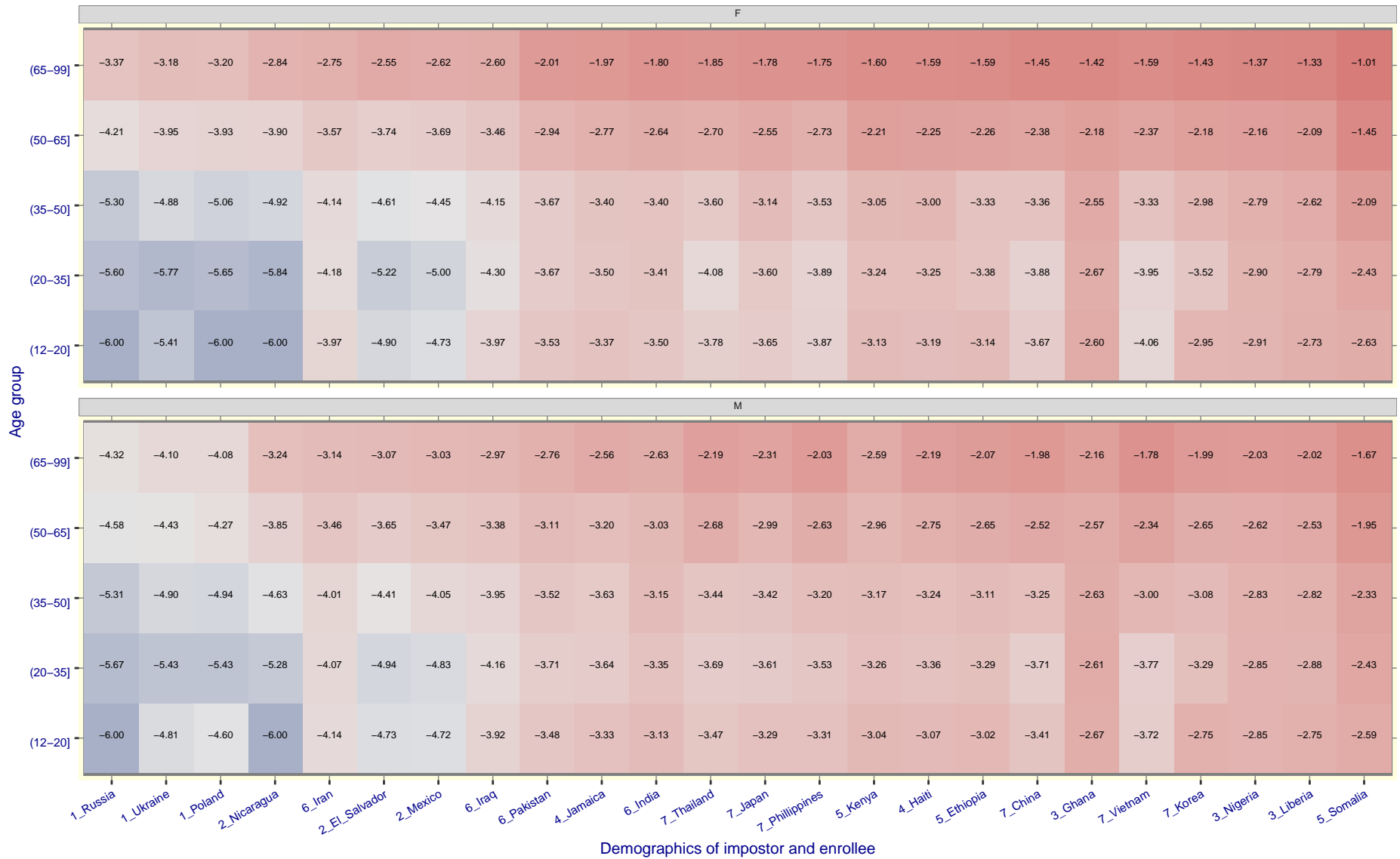
Algorithm: tech5\_003 Threshold: 147.335000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



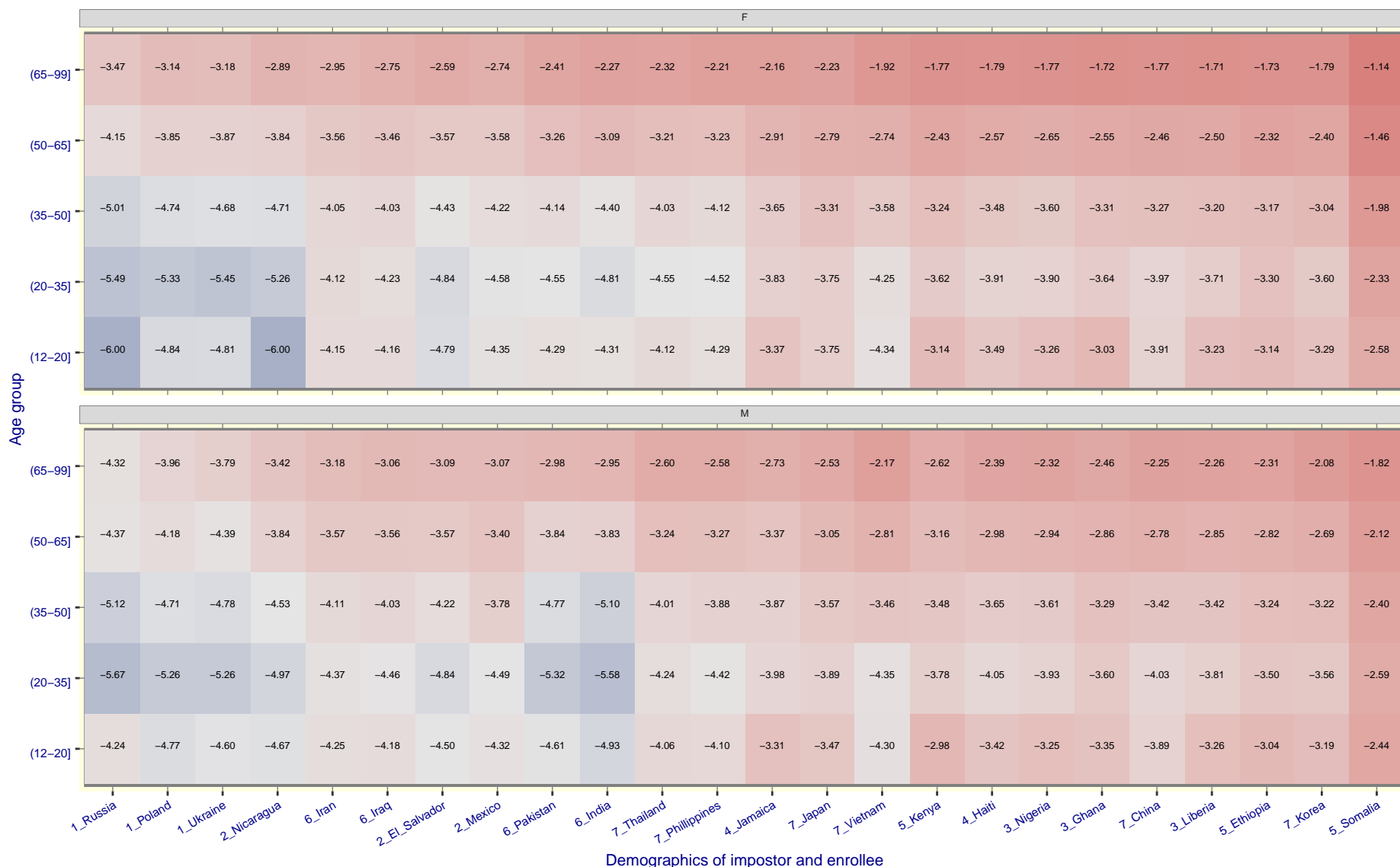
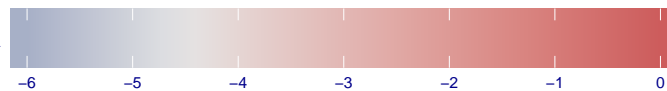
reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/tevian\_004.pdf

Algorithm: tevian\_004 Threshold: 0.947464 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/tevan\_005.pdf

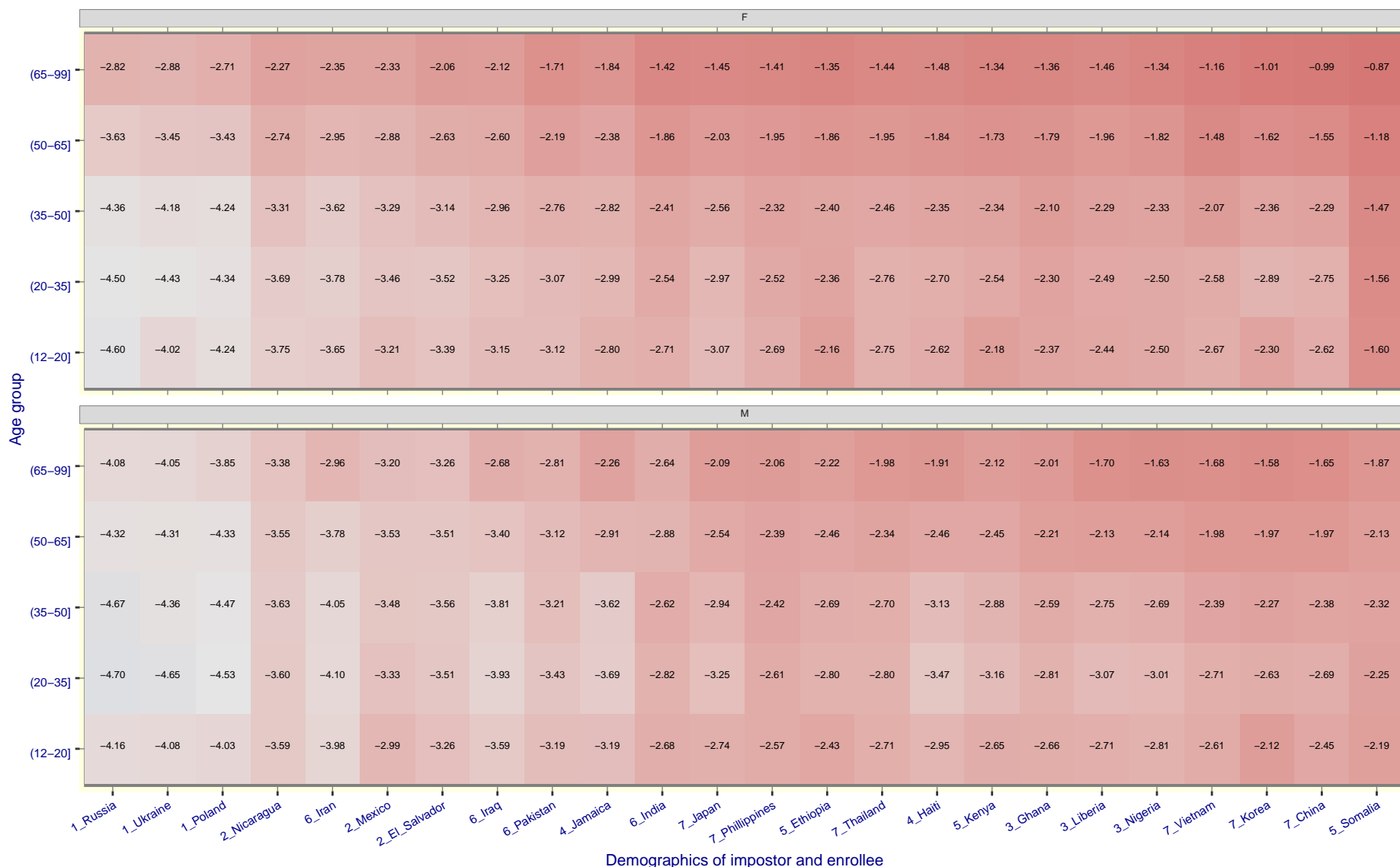
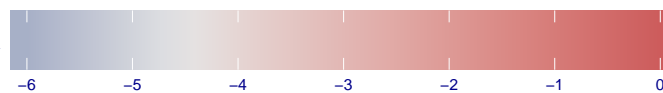
Algorithm: tevan\_005 Threshold: 0.940497 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/tiger\_002.pdf

Algorithm: tiger\_002 Threshold: 151.206439 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

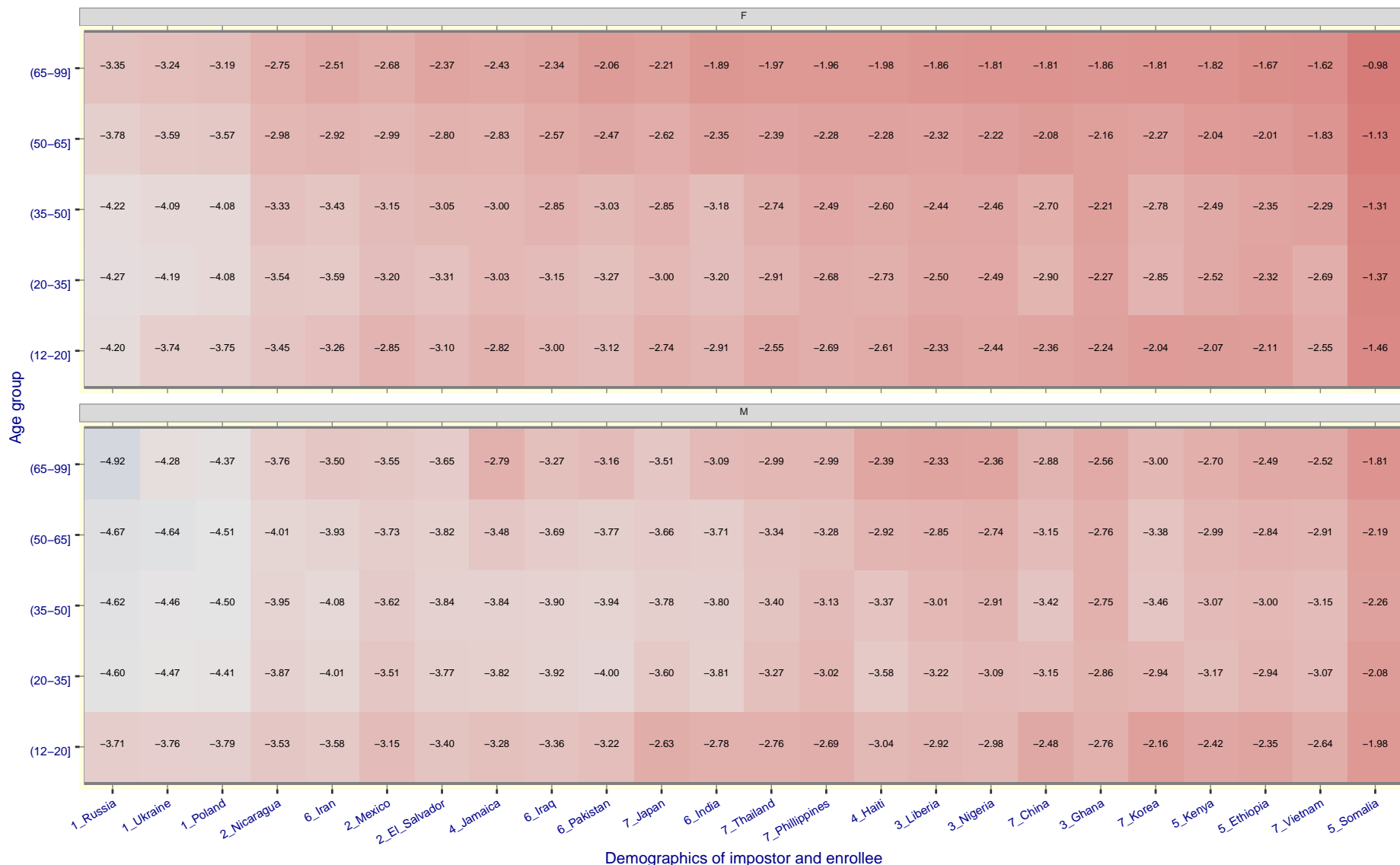
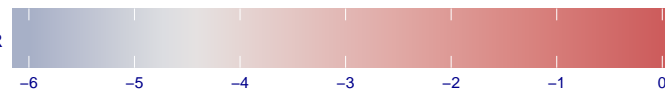
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/tiger\_003.pdf

Algorithm: tiger\_003 Threshold: 147.851439 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

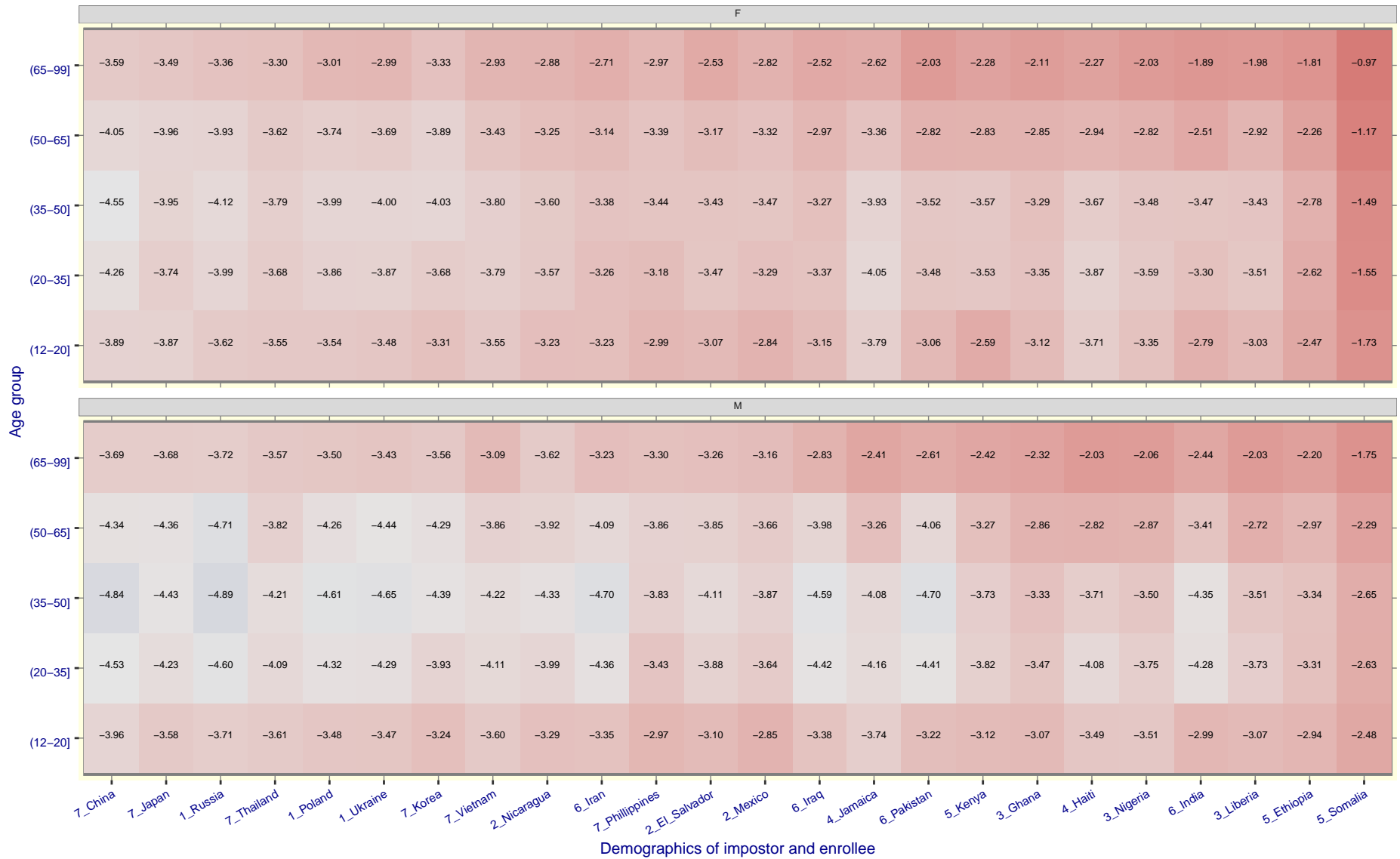
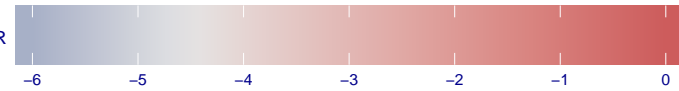


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/tongyi\_005.pdf

Algorithm: tongyi\_005 Threshold: 43.752100 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

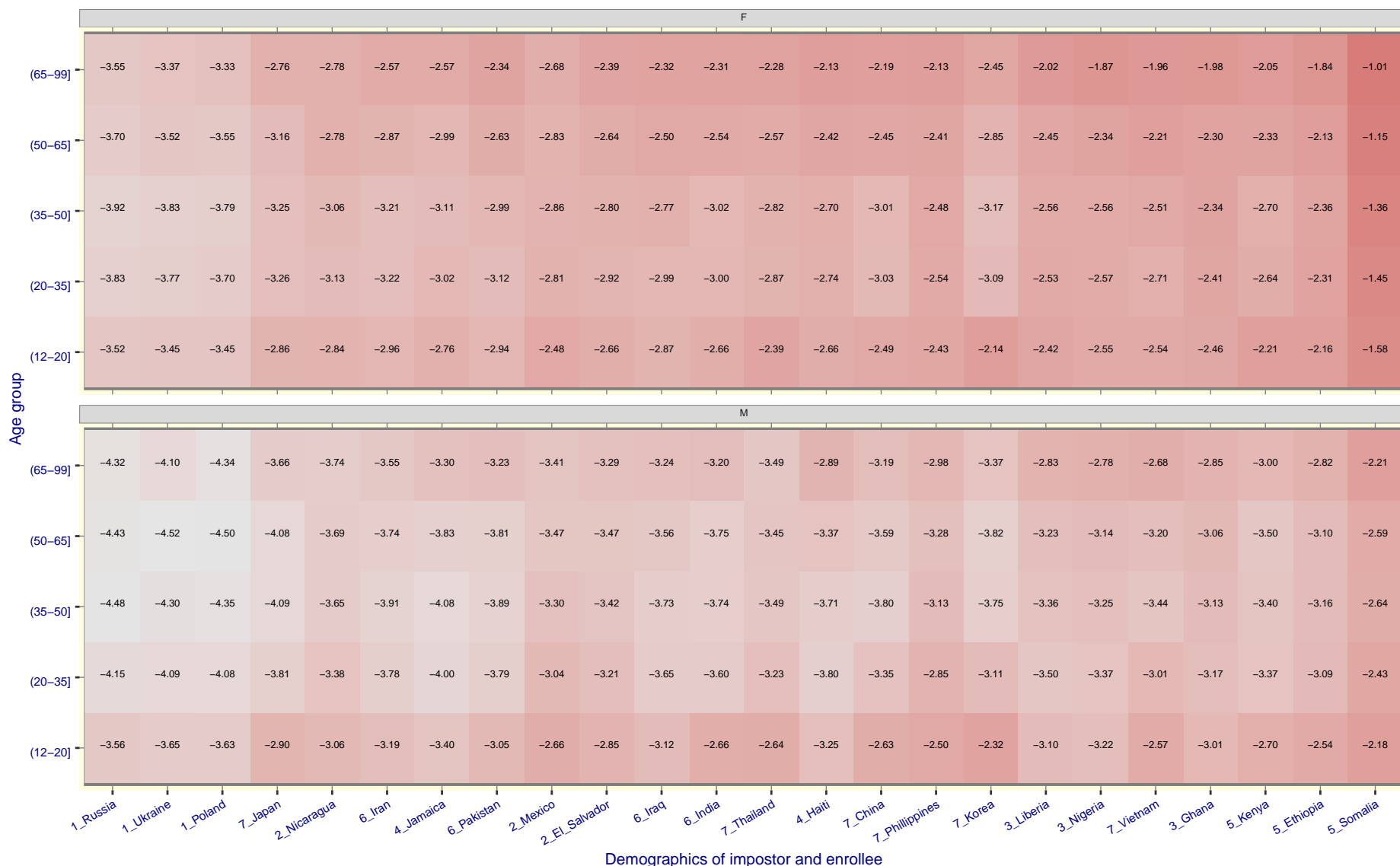
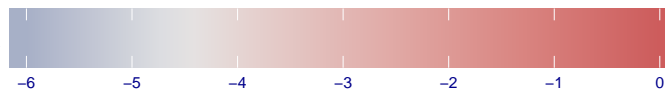
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/toshiba\_002.pdf

Algorithm: toshiba\_002 Threshold: 0.632650 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

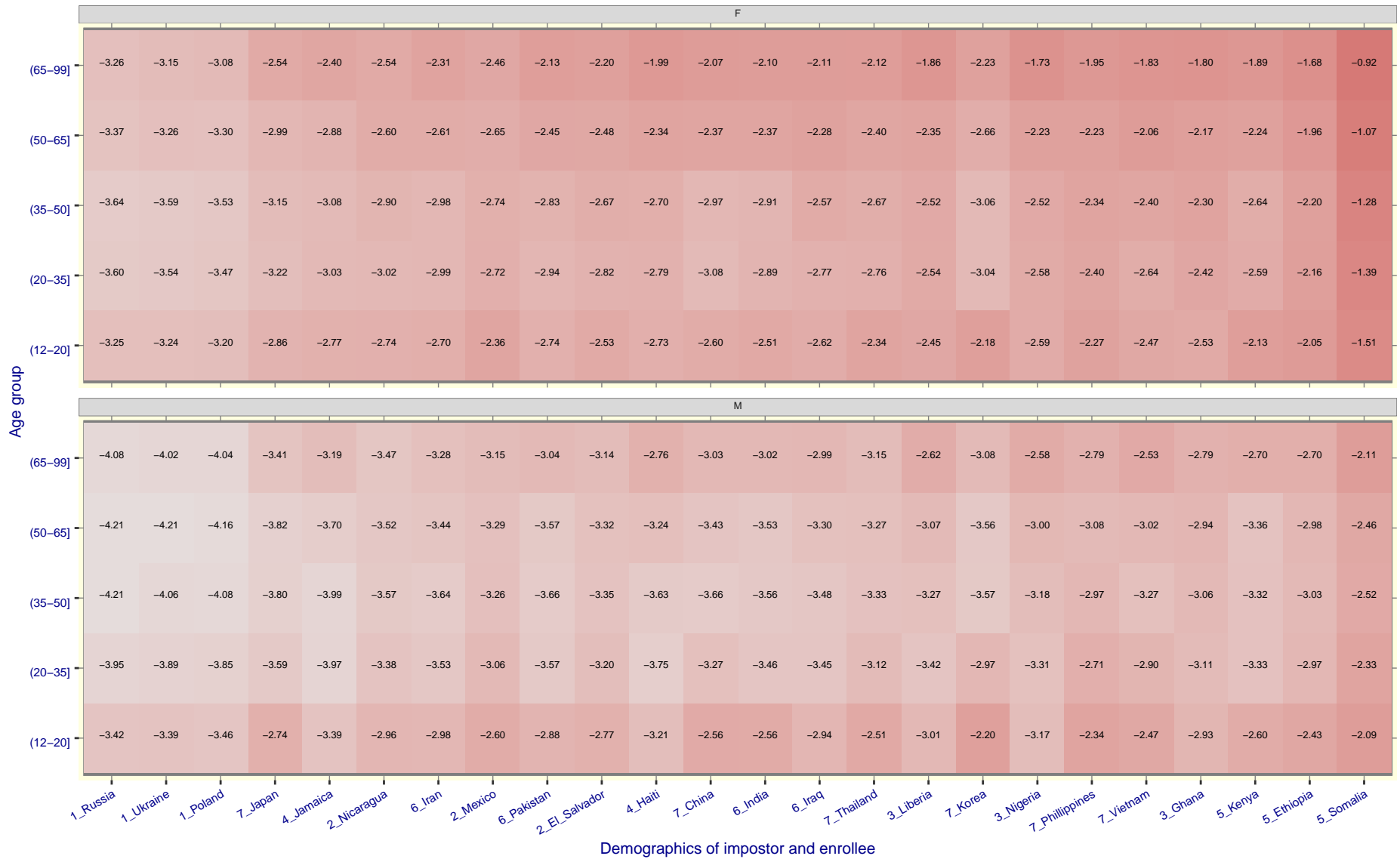
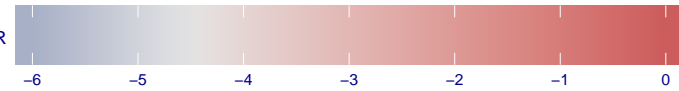




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/toshiba\_003.pdf

Algorithm: toshiba\_003 Threshold: 0.626221 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

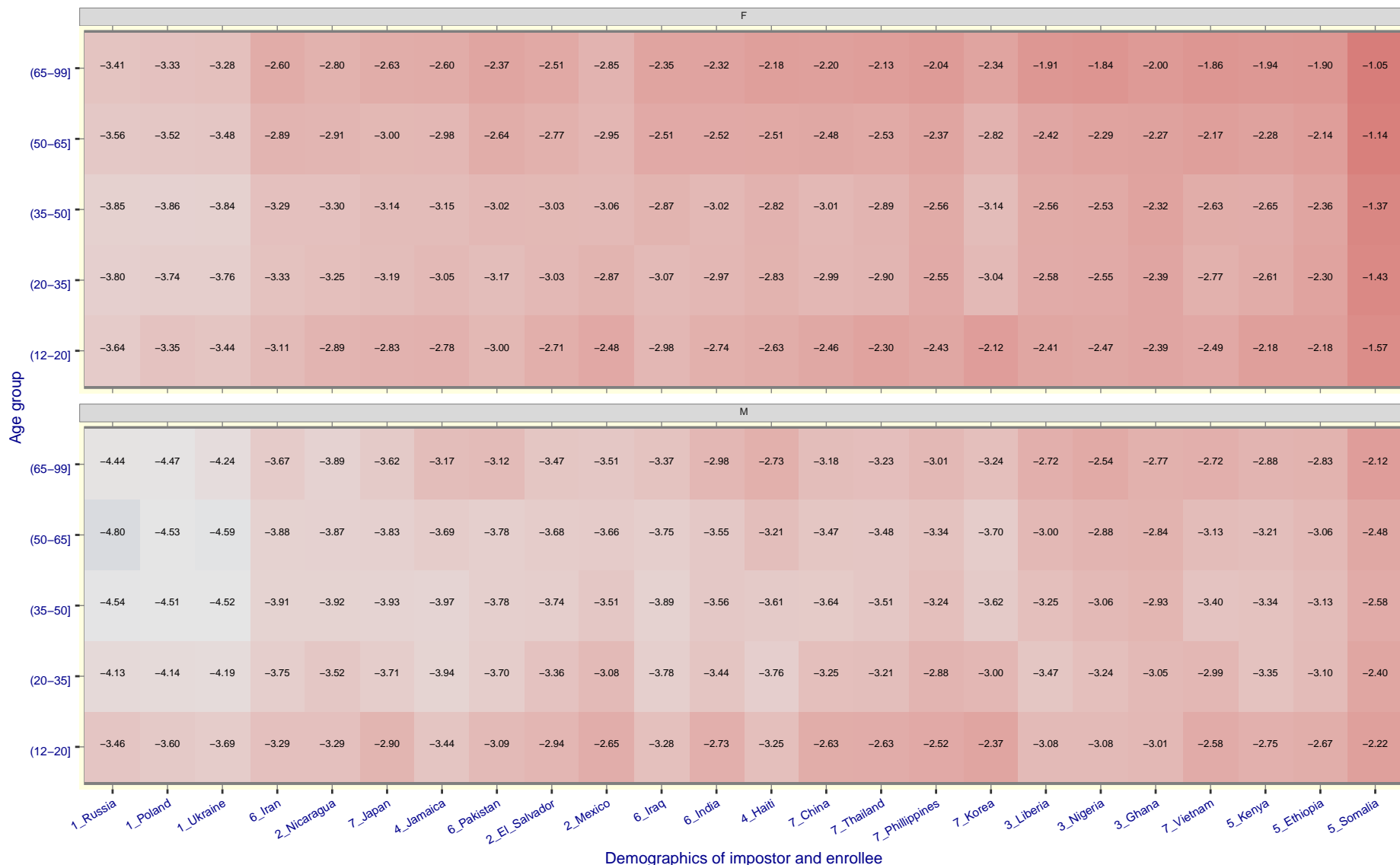
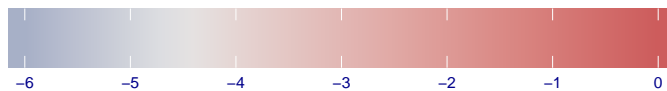


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/ulsee\_001.pdf

Algorithm: ulsee\_001 Threshold: 0.185472 Dataset: Application Nominal FMR: 0.000030 log10 FMR

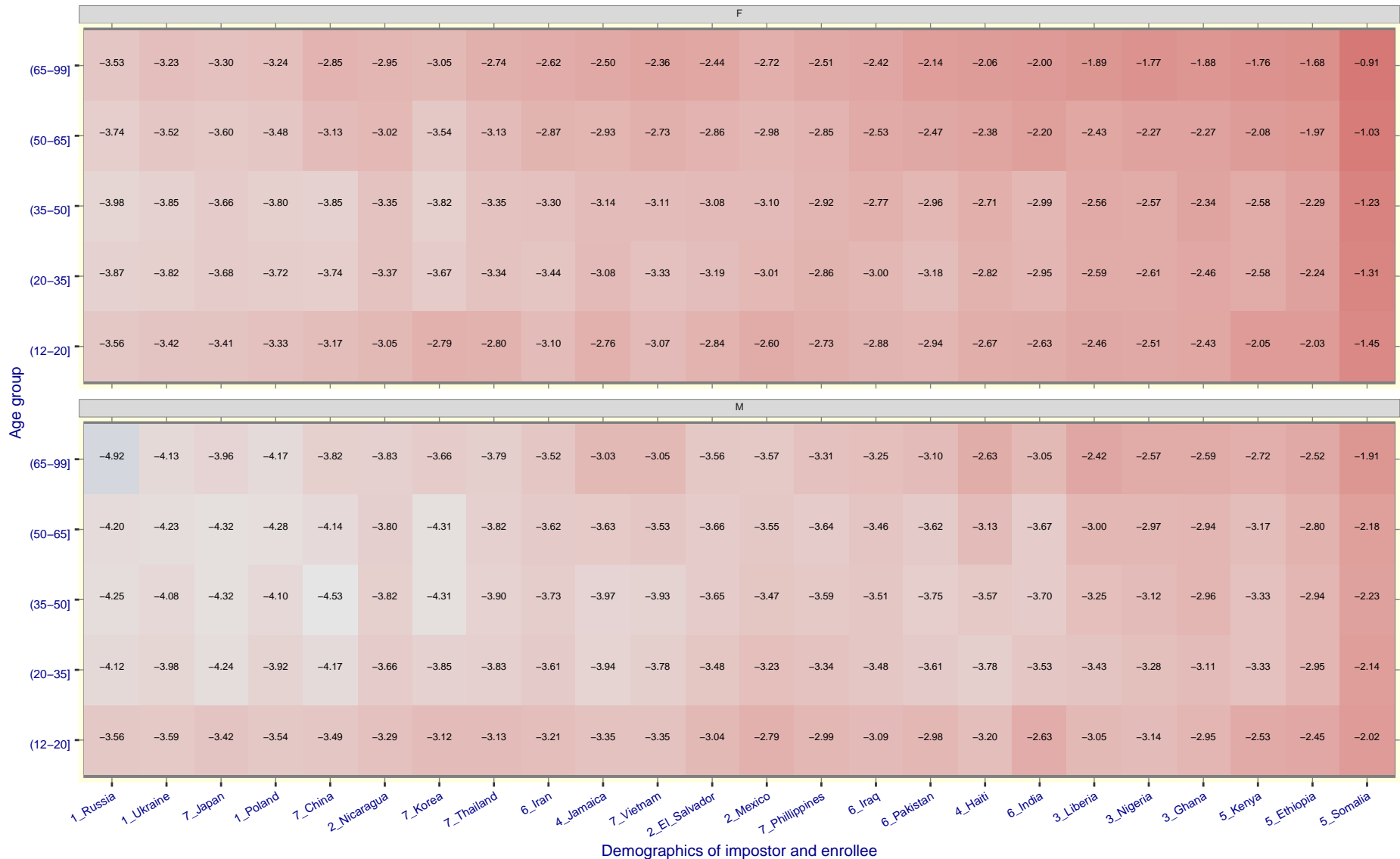
Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/uluface\_002.pdf

Algorithm: uluface\_002 Threshold: 0.804166 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

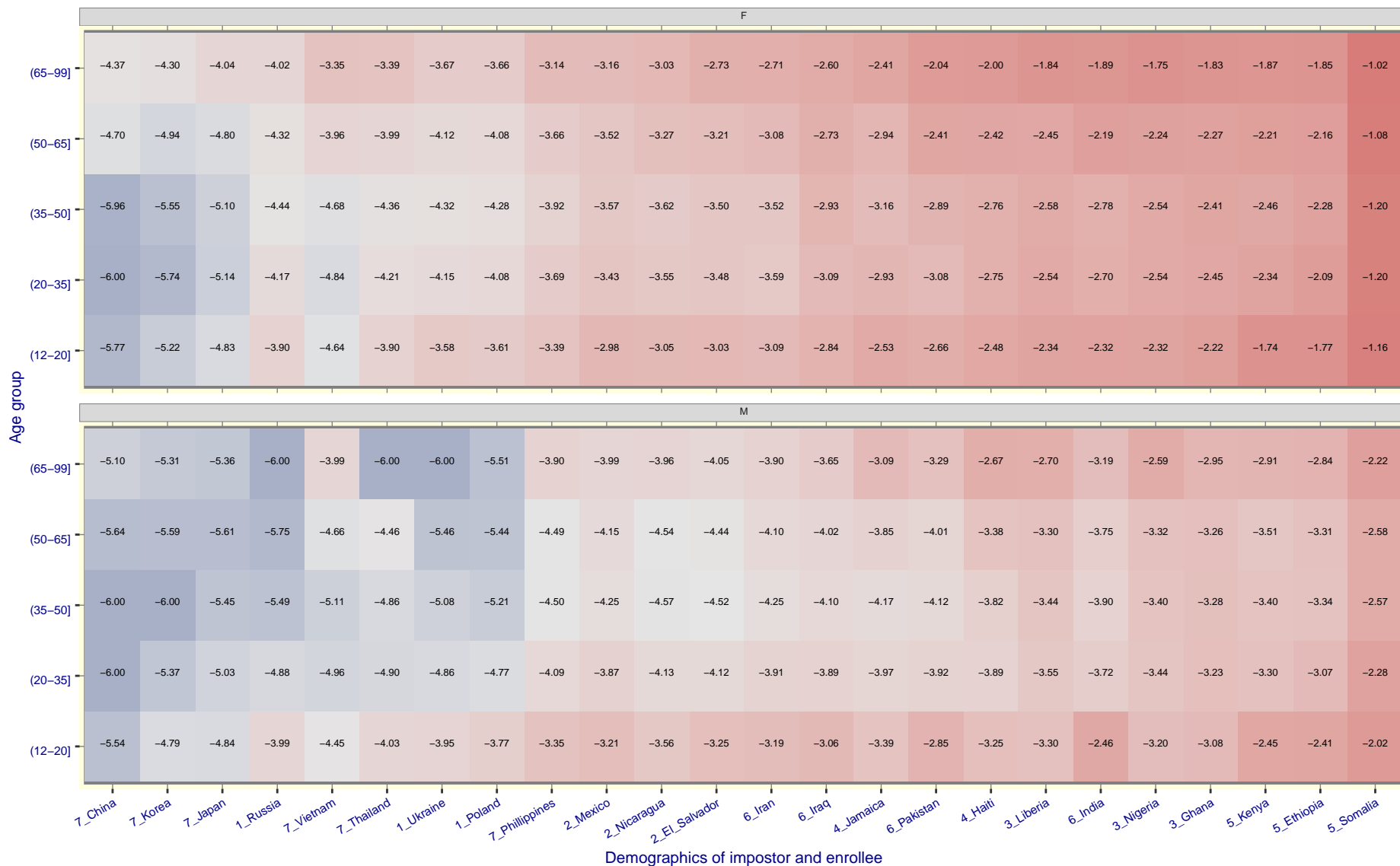
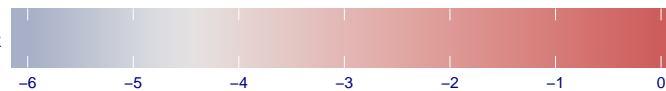
log10 FMR



Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/upc\_001.pdf

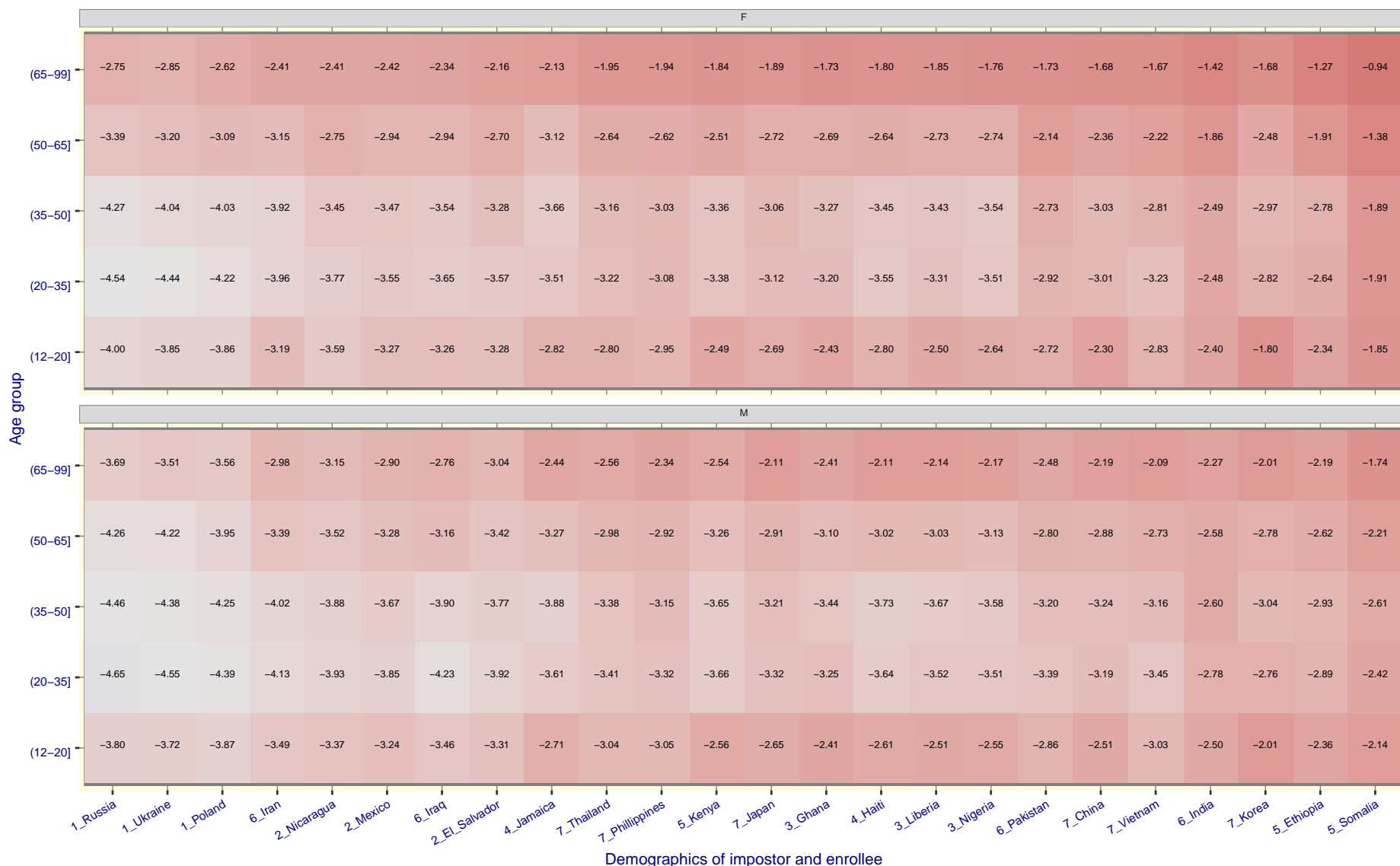
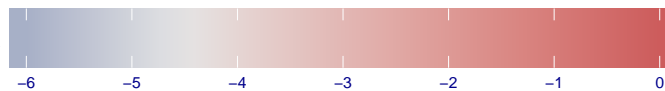
Algorithm: upc\_001 Threshold: 0.498212 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/veridas\_001.pdf

Algorithm: veridas\_001 Threshold: 3.342246 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

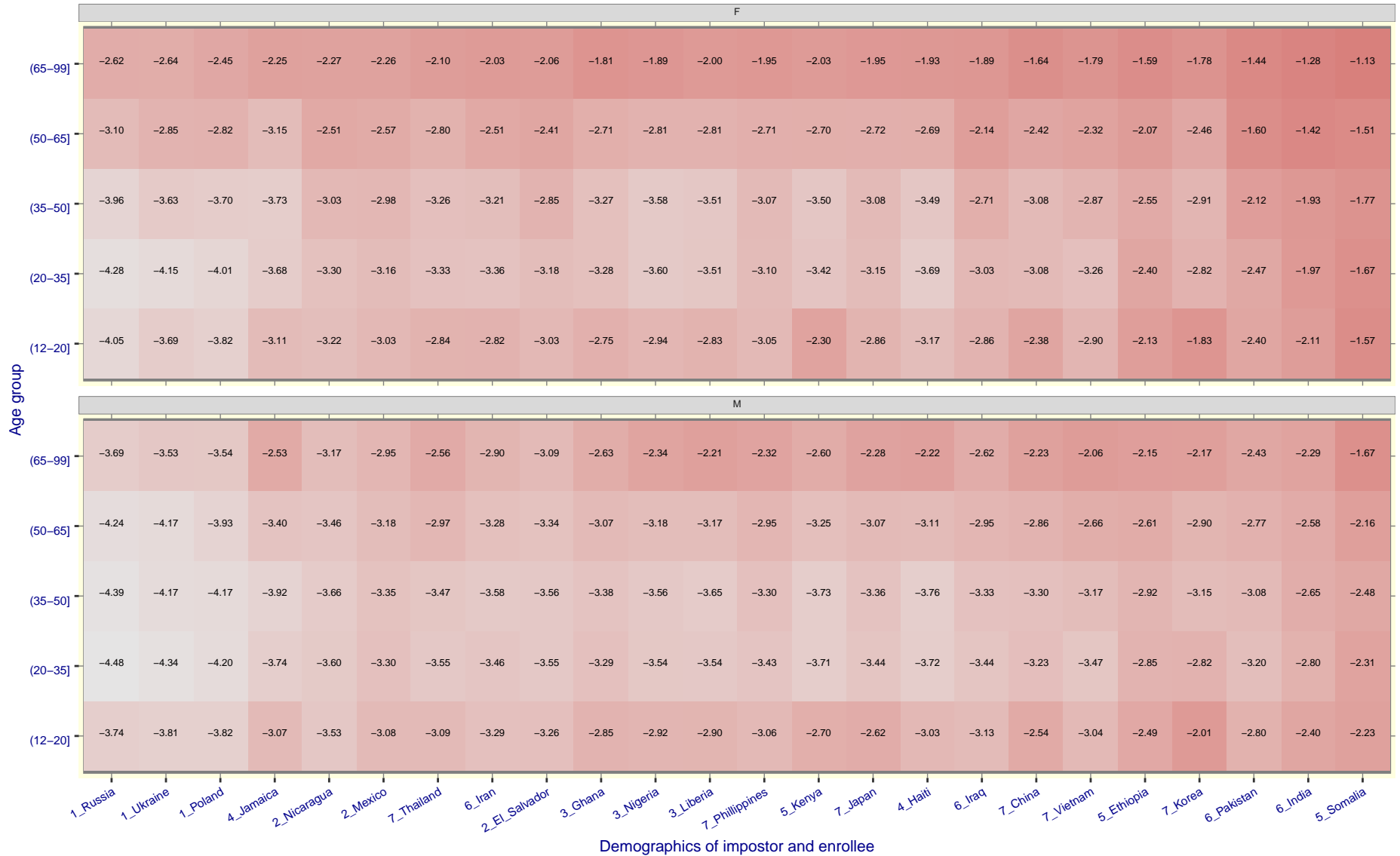


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/veridas\_002.pdf

Algorithm: veridas\_002 Threshold: 3.400320 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

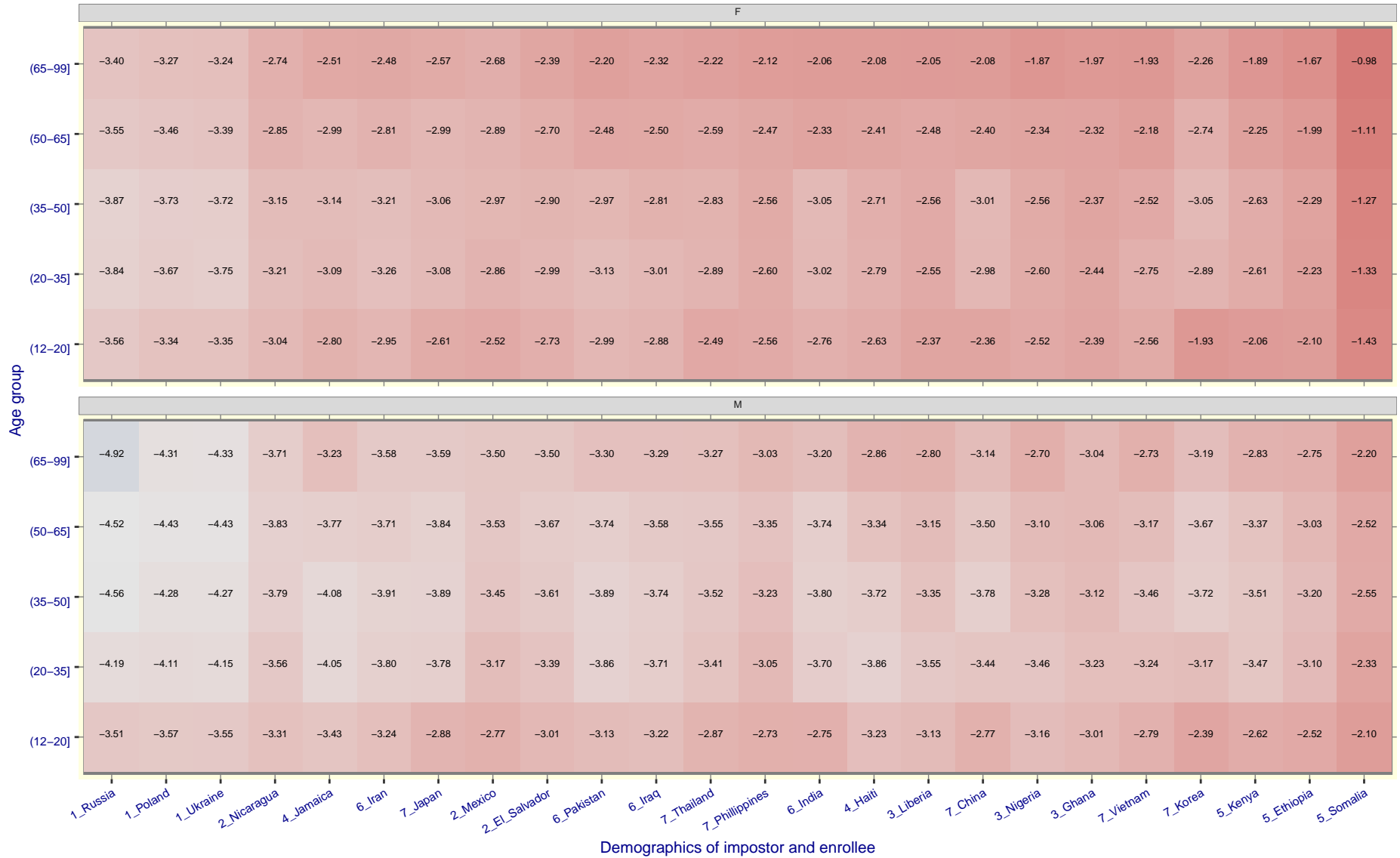
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/via\_000.pdf

Algorithm: via\_000 Threshold: 2.876380 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

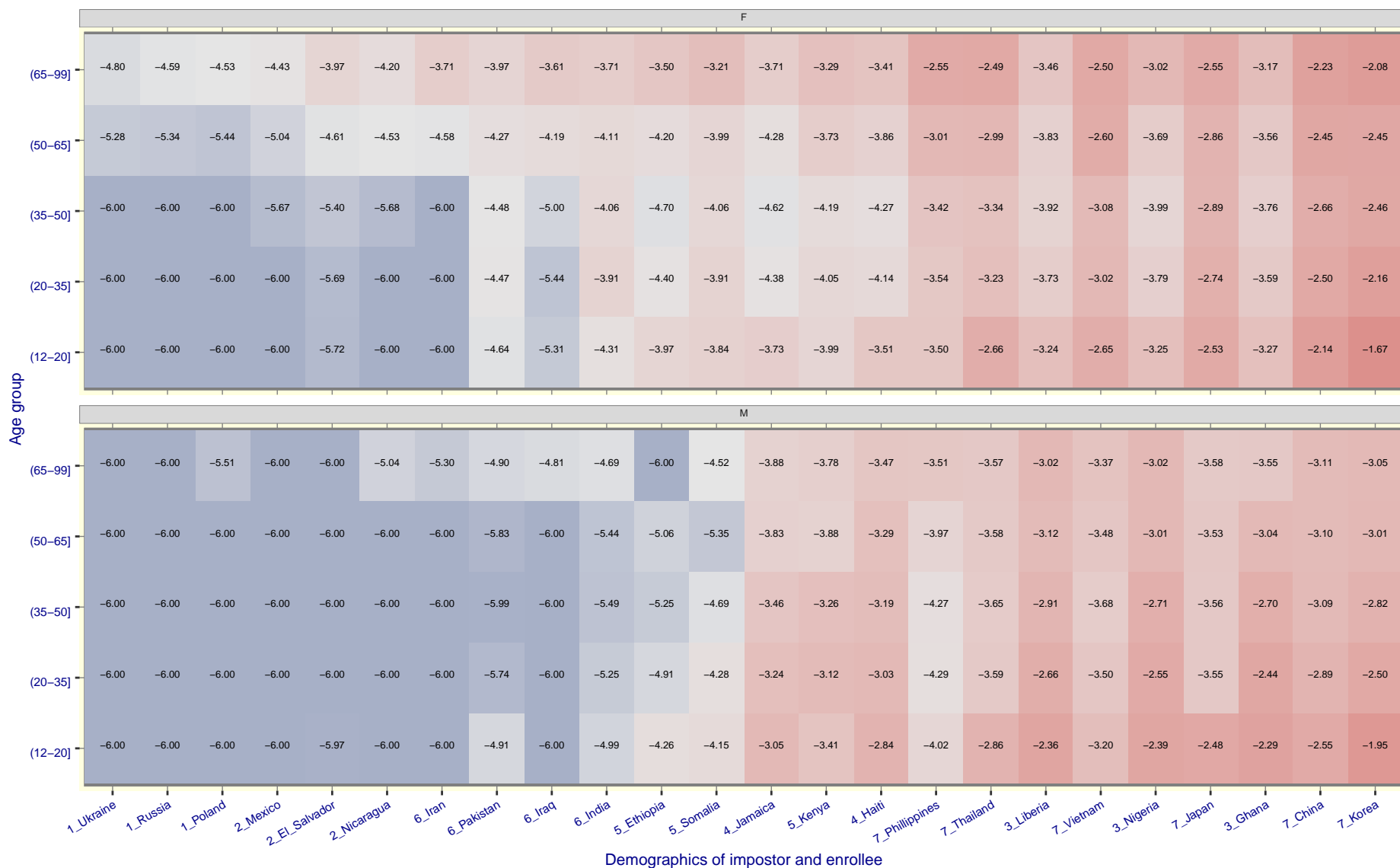
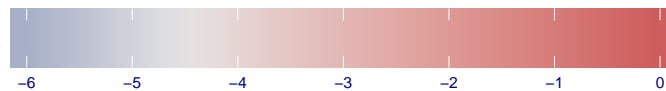


Demographics of impostor and enrollee

reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/videonetics\_001.pdf

Algorithm: videonetics\_001 Threshold: 0.850802 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

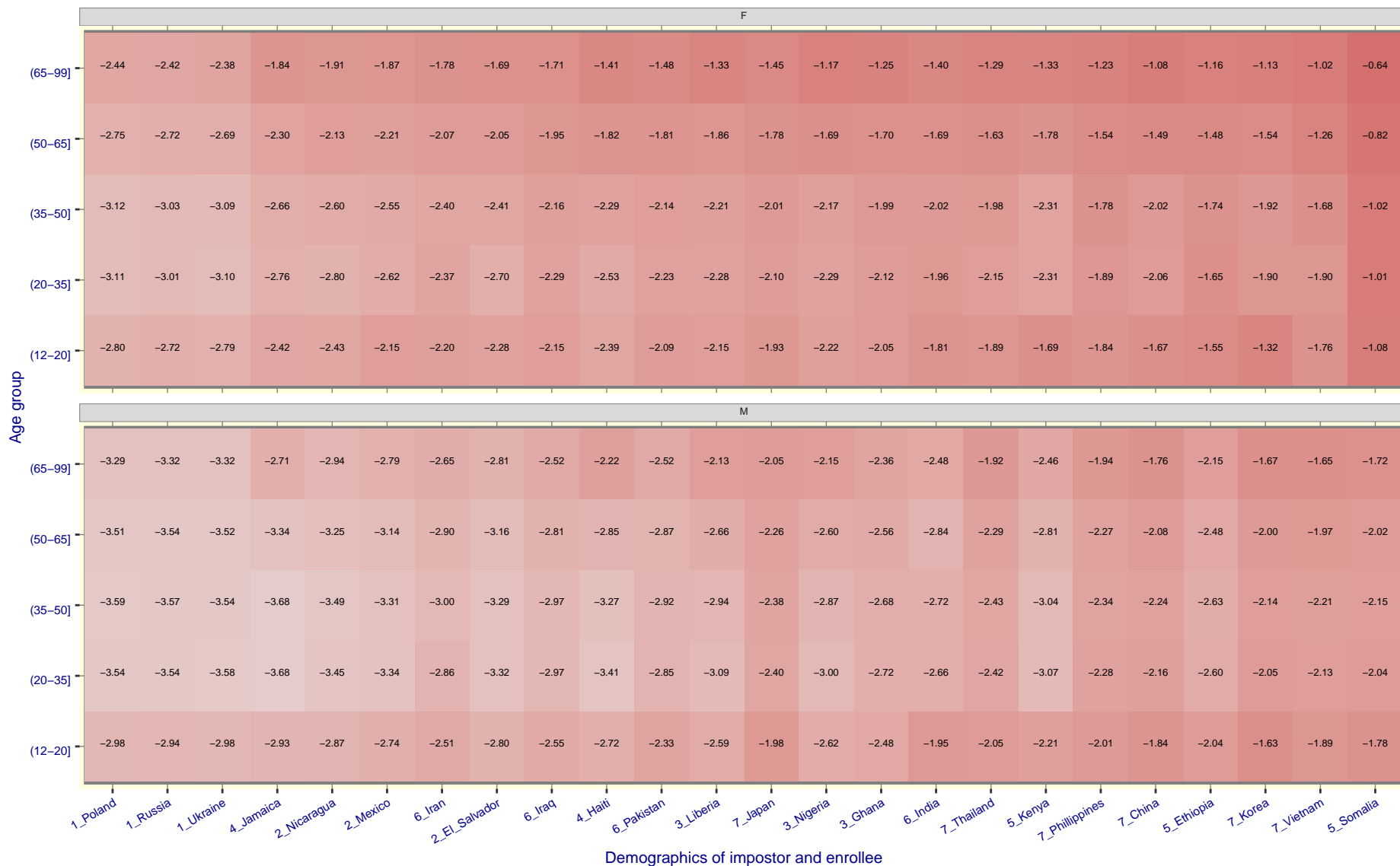
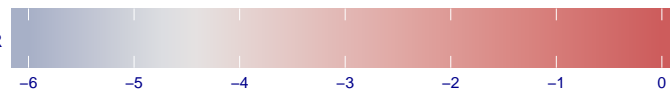


Demographics of impostor and enrollee



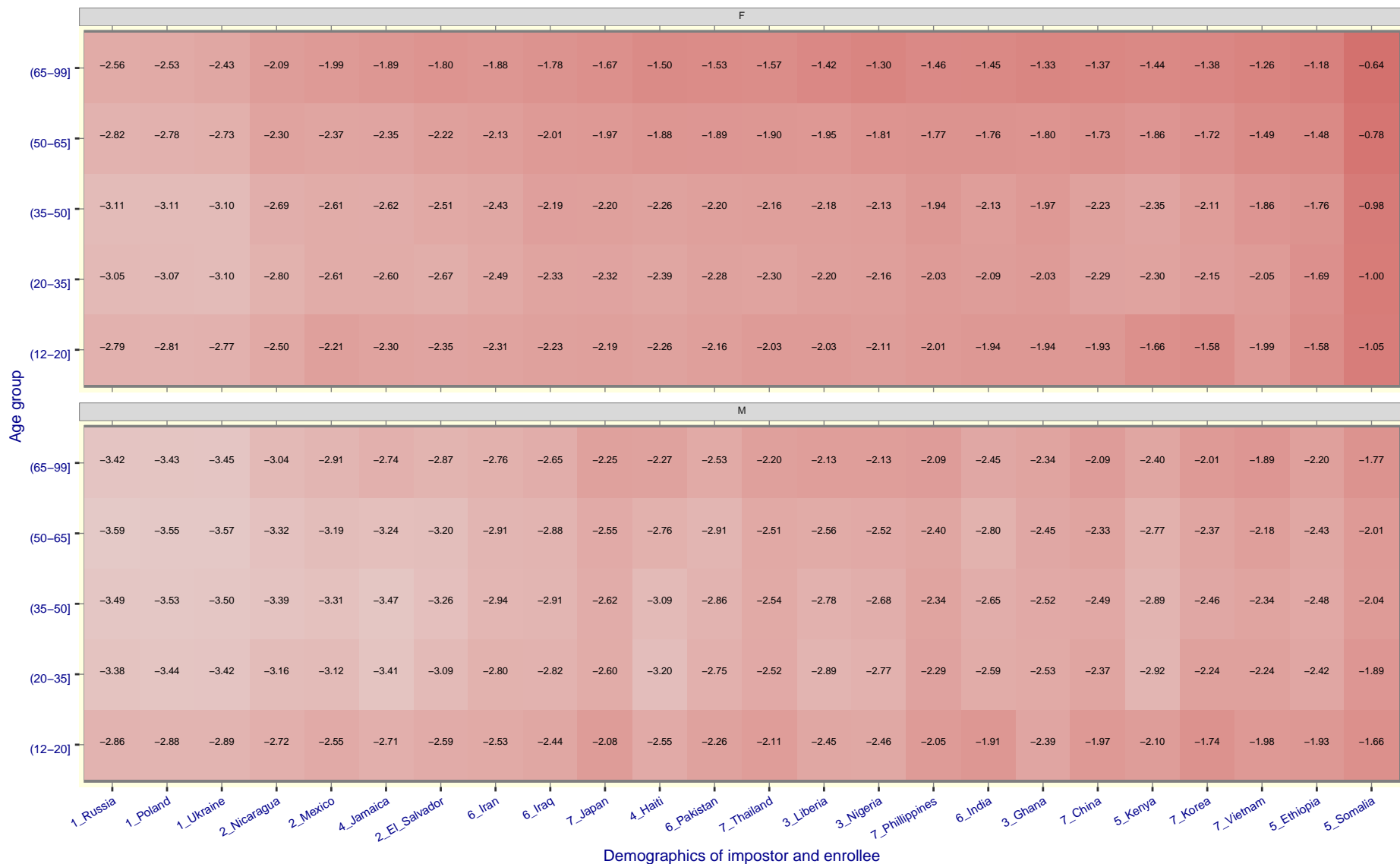
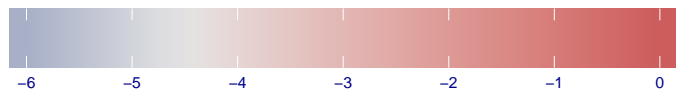
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/vigilantsolutions\_006.pdf

Algorithm: vigilantsolutions\_006 Threshold: 2.879437 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



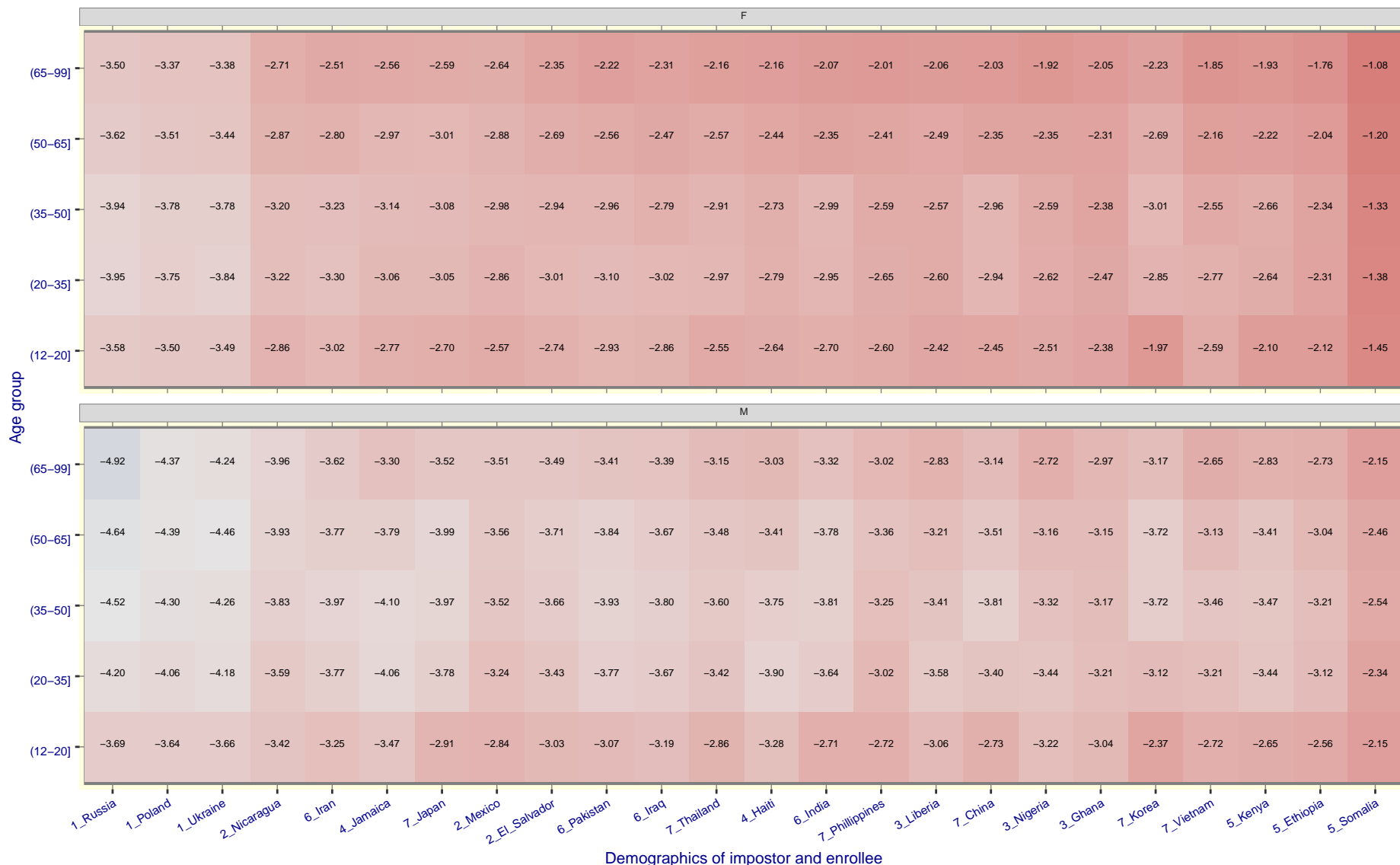
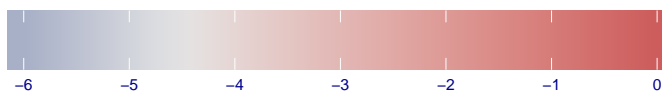
reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/vigilantsolutions\_007.pdf

Algorithm: vigilantsolutions\_007 Threshold: 2.858313 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/vion\_000.pdf

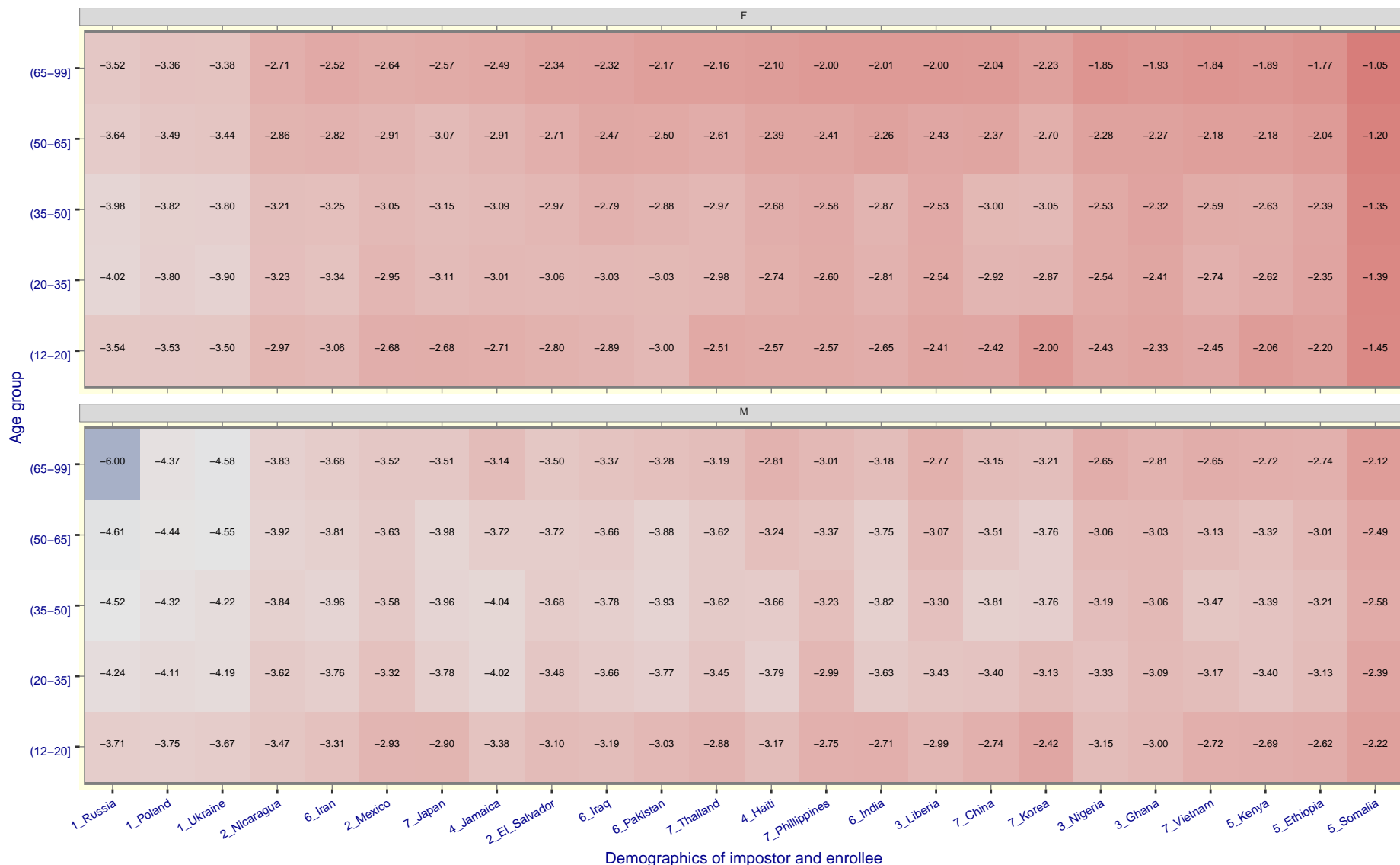
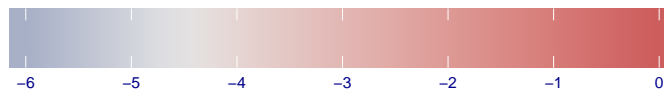
Algorithm: vion\_000 Threshold: 0.438061 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/visionbox\_000.pdf

Algorithm: visionbox\_000 Threshold: 0.442652 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

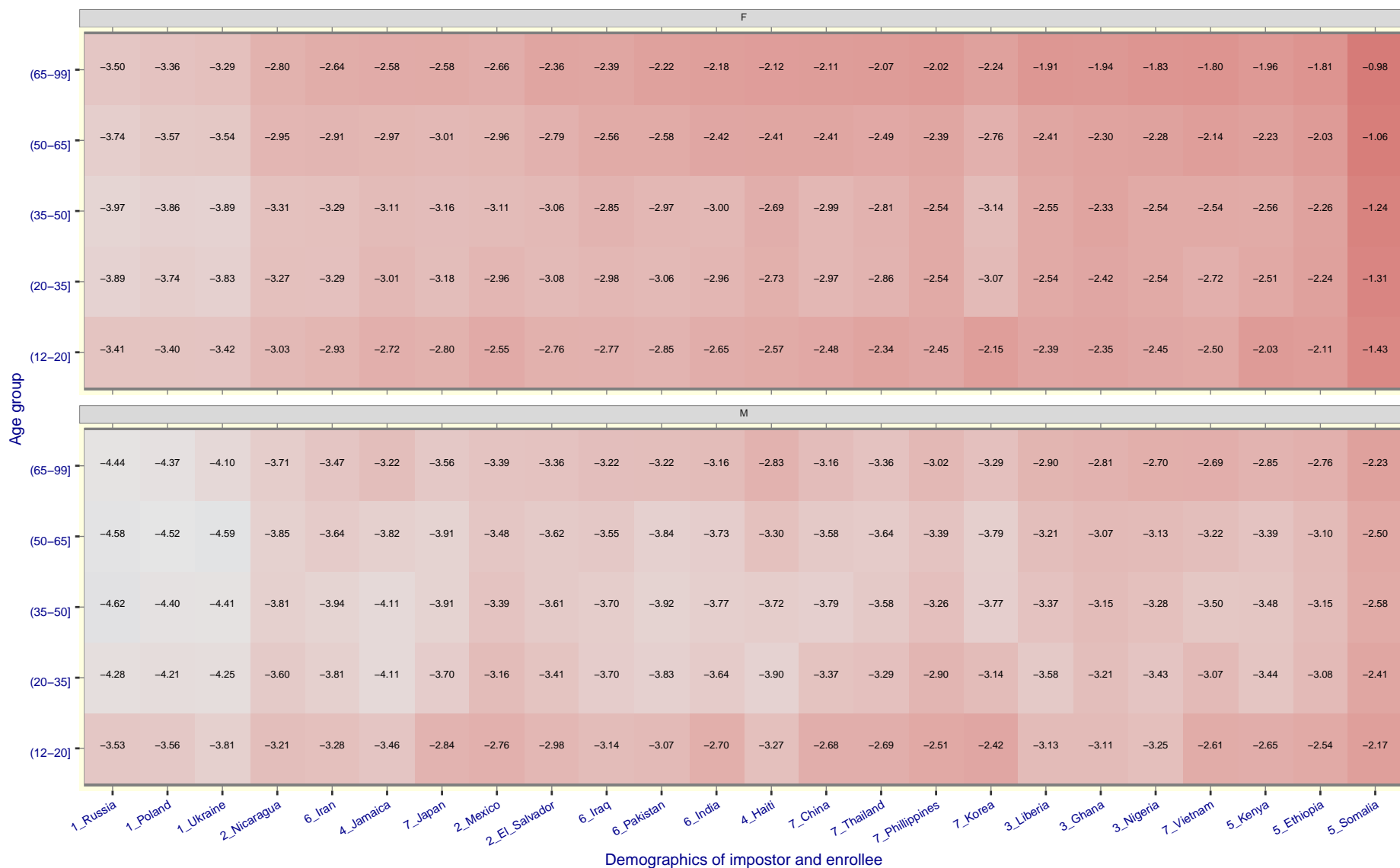
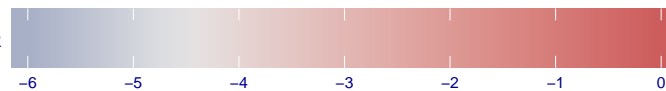
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/visionbox\_001.pdf

Algorithm: visionbox\_001 Threshold: 0.399794 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

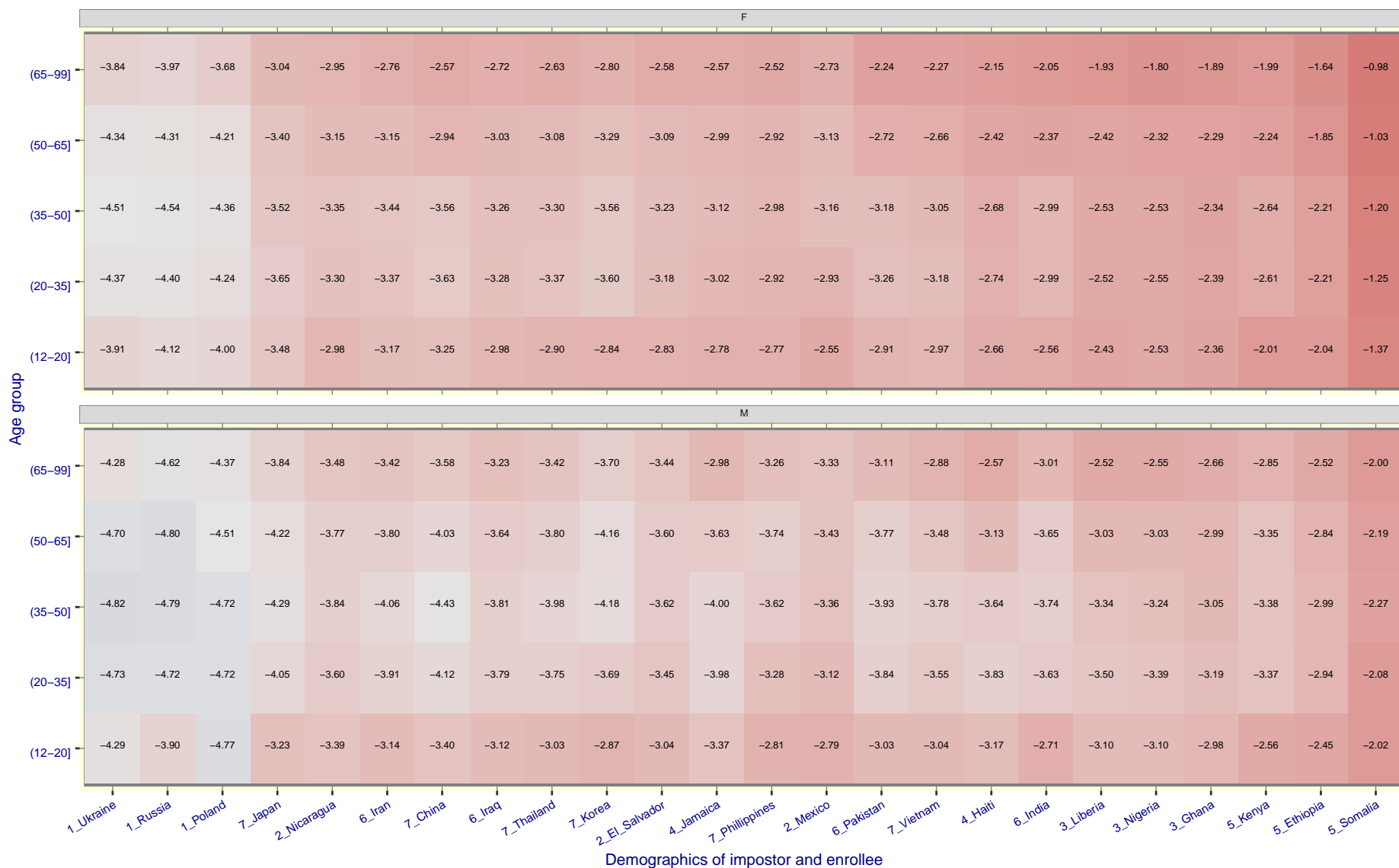
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/visionlabs\_006.pdf

Algorithm: visionlabs\_006 Threshold: 0.764571 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

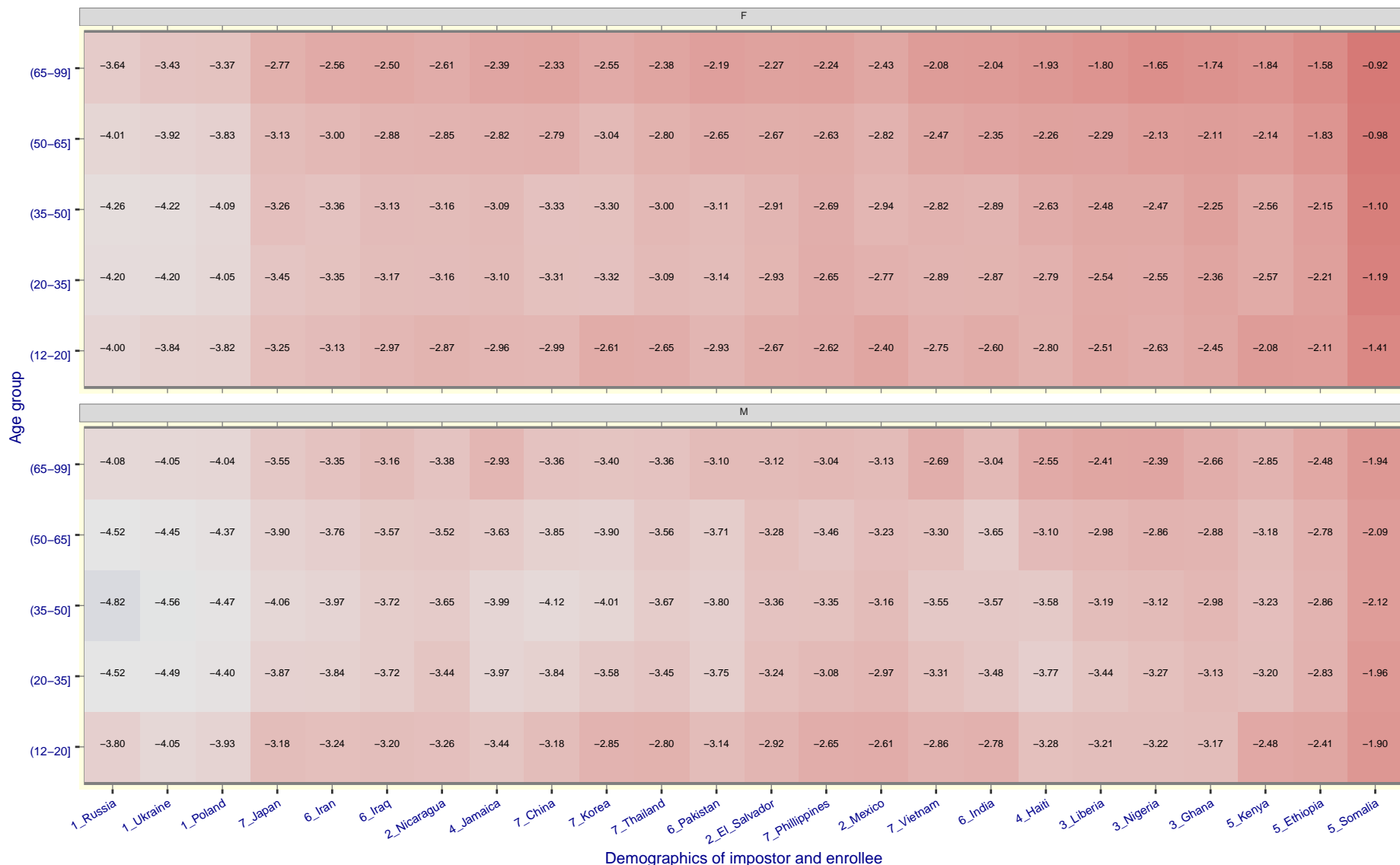
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/visionlabs\_007.pdf

Algorithm: visionlabs\_007 Threshold: 0.760528 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

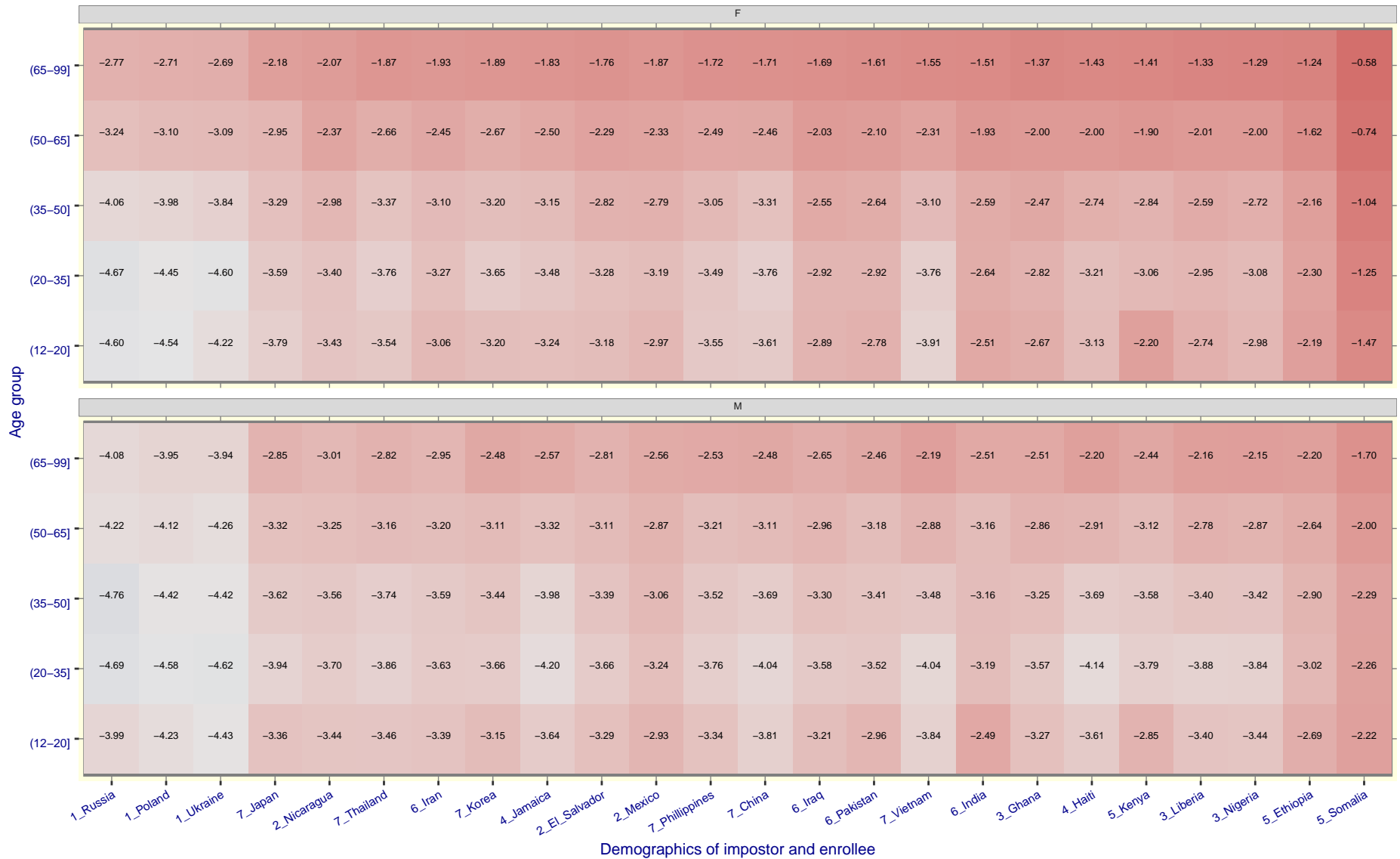
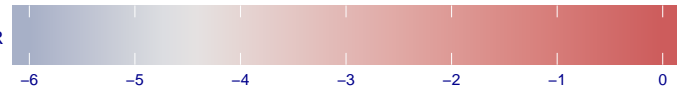
log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/vocord\_006.pdf

Algorithm: vocord\_006 Threshold: 996.112000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR

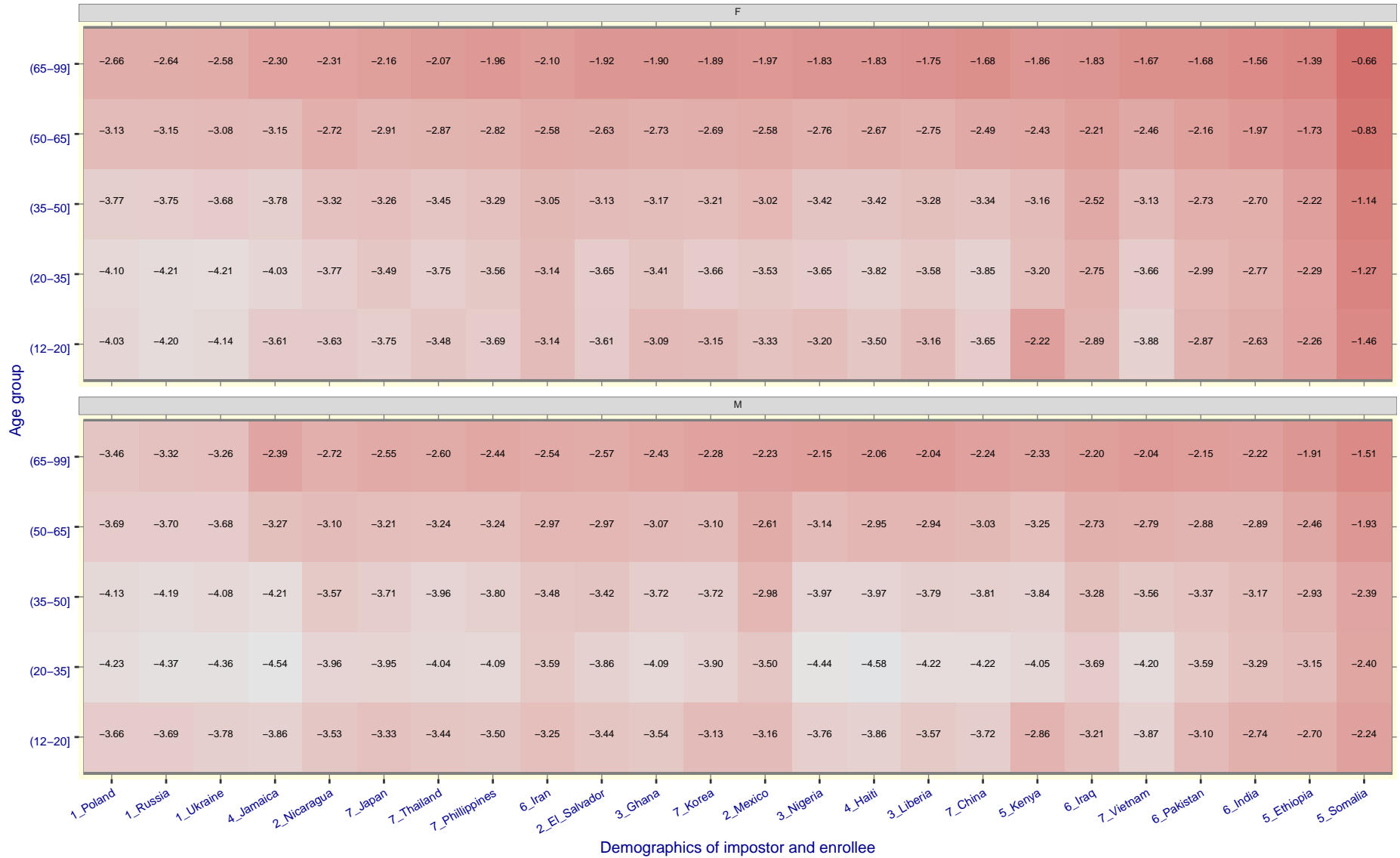
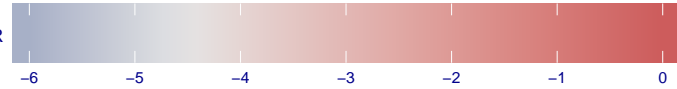




reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/vocord\_007.pdf

Algorithm: vocord\_007 Threshold: 995.473000 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

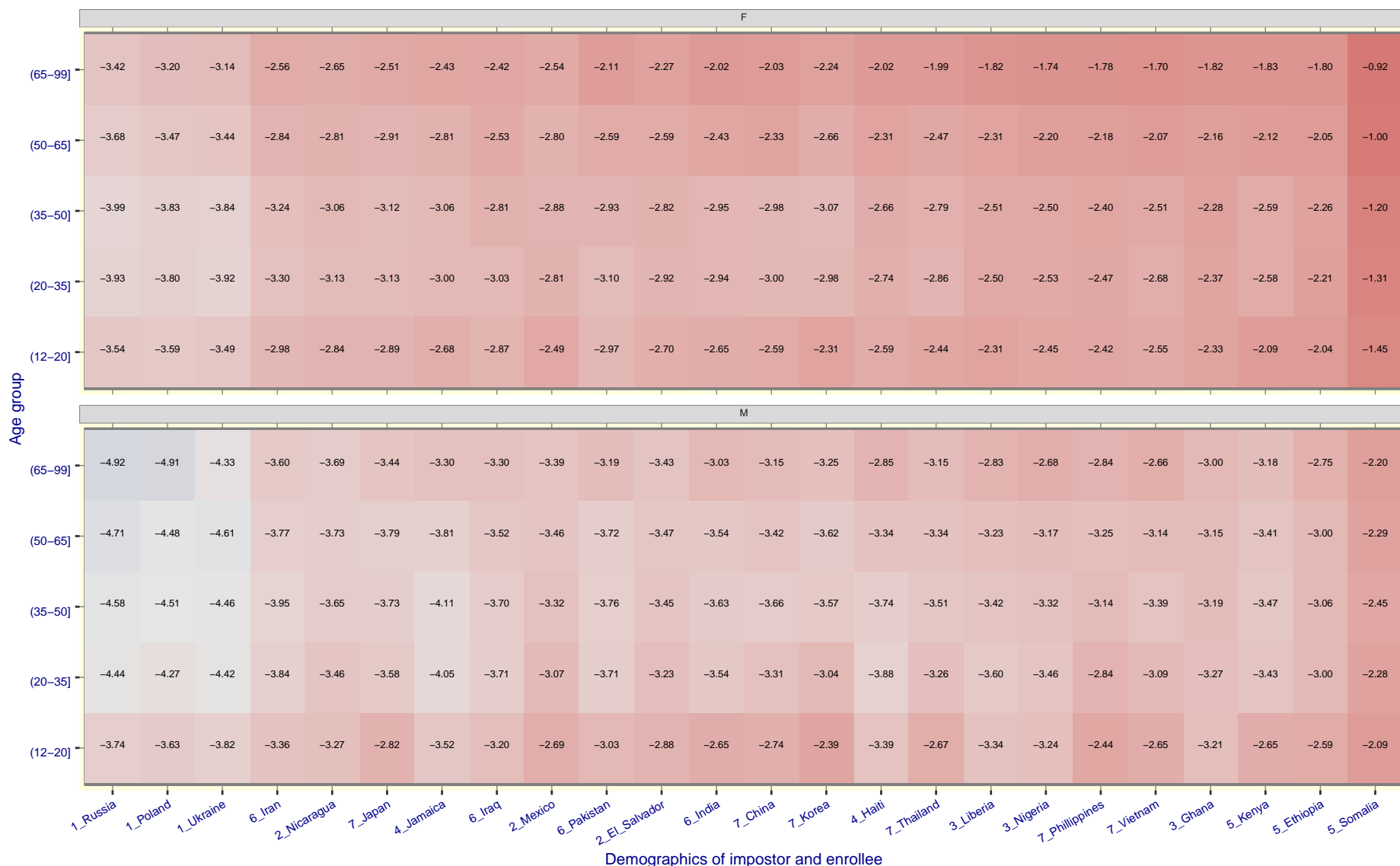
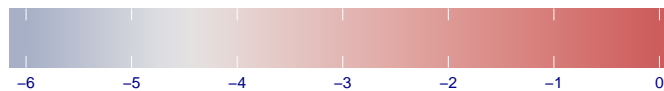
log10 FMR



reports/11/figures/dhs\_obim\_cross\_country impostors/heatmap\_fmr\_age\_x\_country/winsense\_000.pdf

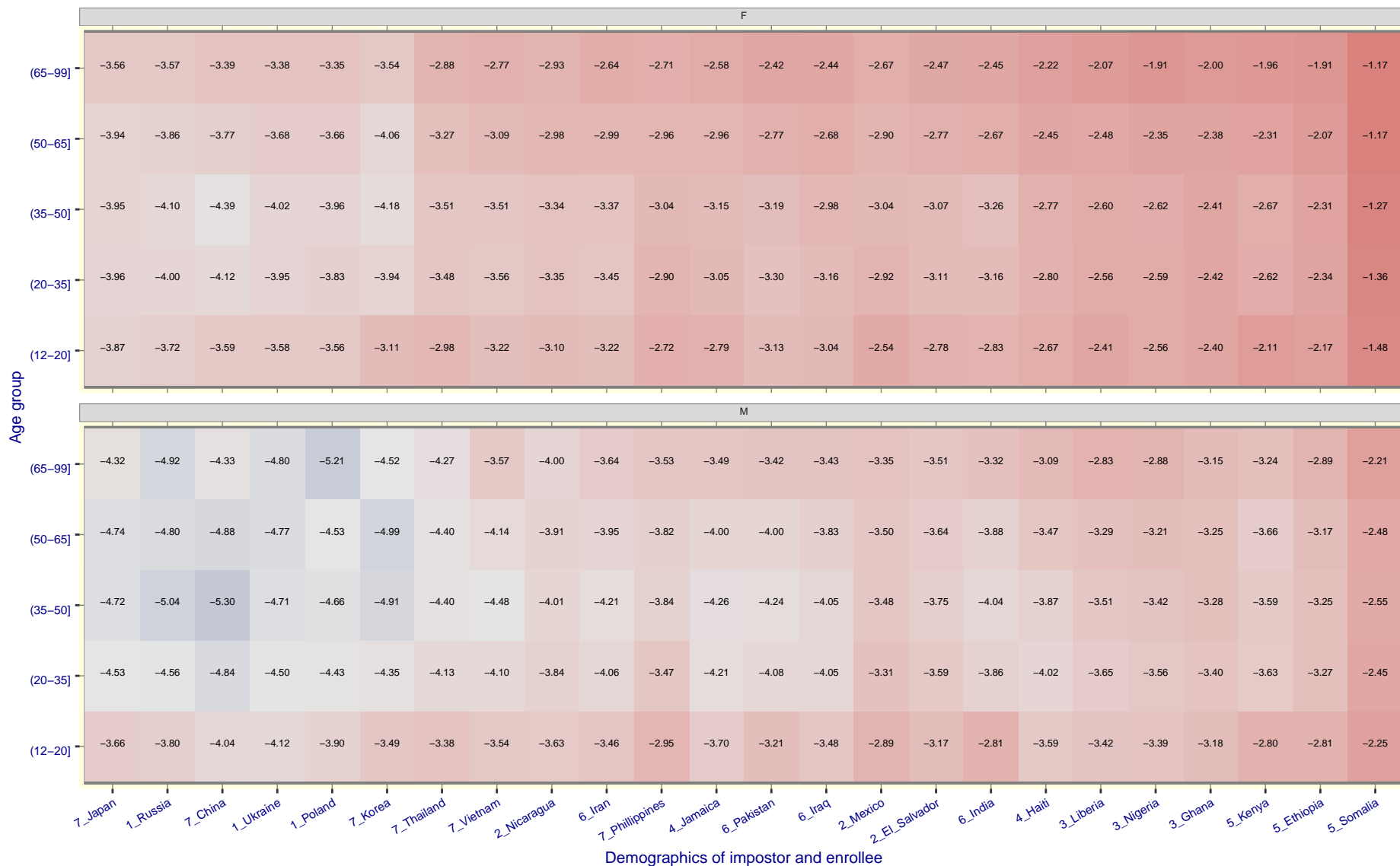
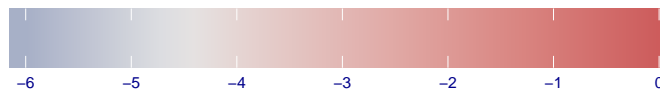
Algorithm: winsense\_000 Threshold: 0.427596 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/x-laboratory\_000.pdf

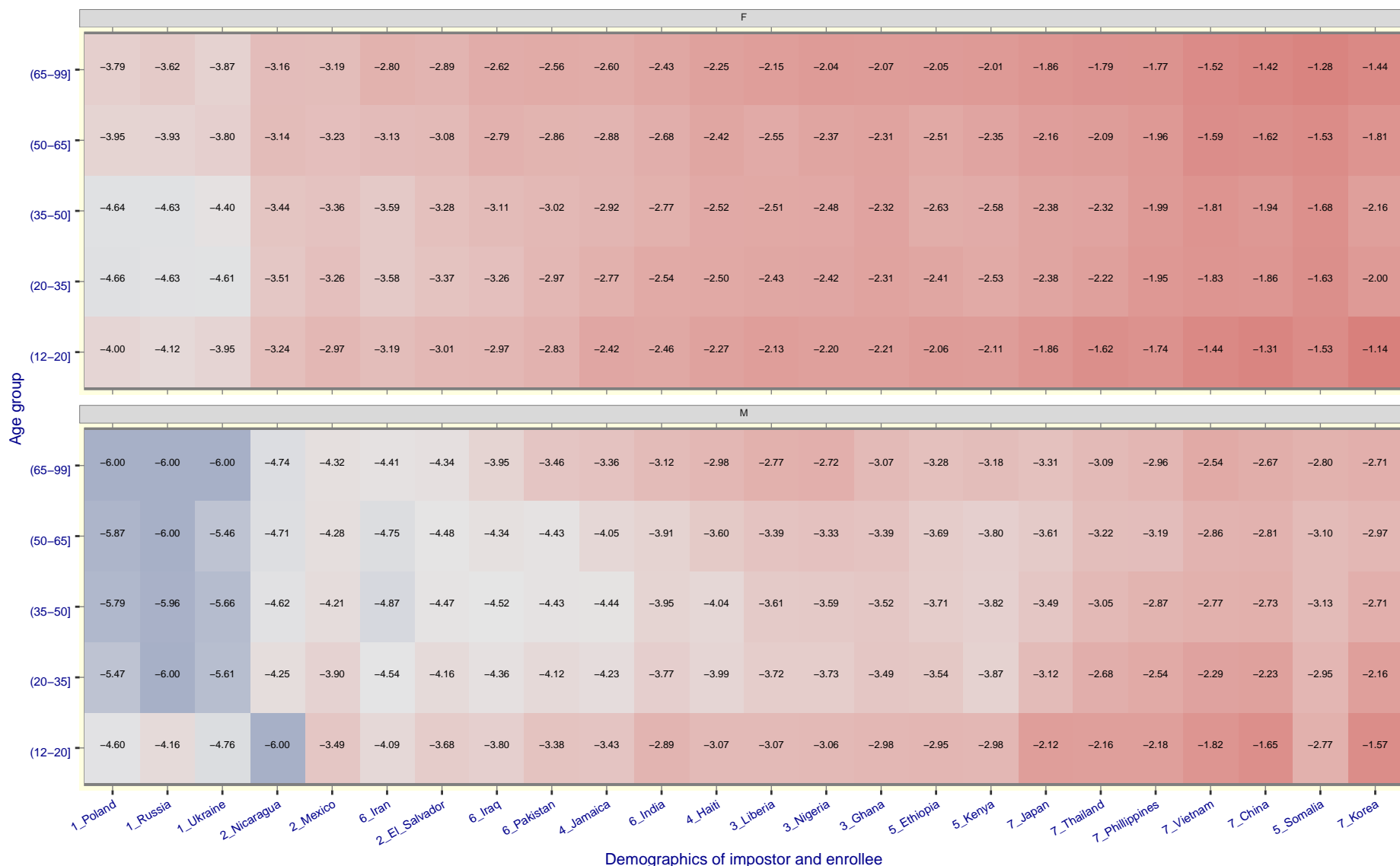
Algorithm: x-laboratory\_000 Threshold: 0.443660 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/yisheng\_004.pdf

Algorithm: yisheng\_004 Threshold: 5.398399 Dataset: Application Nominal FMR: 0.000030  
 Impostors have same sex, age and country of birth

log10 FMR



reports/11/figures/dhs\_obim/cross\_country/impostors/heatmap\_fmr\_age\_x\_country/yitu\_003.pdf

Algorithm: yitu\_003 Threshold: 37.785000 Dataset: Application Nominal FMR: 0.000030 log10 FMR  
 Impostors have same sex, age and country of birth

