

## Appendix 3 - GP sample distribution in rich and poor parts of Vienna

Our analysis of the sample proportions was impaired by the condition of anonymity of GPs. We could not get insight into the original name lists compromising the VKI sampling base.

However as name and office location of the visited 21 GPs were published in the VKI magazine report we could look up their contract status in the official website of the Medical Association of Vienna (Ärztelkammer für Wien). We found seven “private GPs” and 14 “contracted GPs”.

With this data we were able to perform a further assessment of the quality and representativeness of the VKI sampling. We hypothesized, that the great majority of private GPs would practice in the richer part of Vienna and should be overrepresented in the sample there.

Vienna has 23 official political subunits, so called districts. We tried to find a measure to separate the 23 city districts into two equal parts regarding affluence. No official separation of rich versus poor districts exists. There is a historical dimension however, as the city grew out of the 2000 year old center, the 1. district now. The next ring around this core are the districts 2. – 9., built until 1900. Affluence is in principle more concentrated in the 9 inner traditional districts, than in the more modern city periphery.

To refine our simple historical inner/outer district model we looked for more objective data. We used two independent measures from two independent data sources to further triangulate and categorize districts in Vienna into rich and poor for the purpose of this study.

First we used purchasing power data, available on the internet, on the five richest versus the five poorest districts of whole Austria (99 districts). Among the five richest Austrian districts, four were in Vienna (districts number 1, 13, 18, 19). Among the poorest Austrian five was the 15<sup>th</sup> district of Vienna (RegioData Research 1-3).

As purchasing power data were not available to us for all Vienna districts, we used as proxy data the market price for purchasing a flat. End of 2008 the range was € 5370 (1. district) to € 1650 (11. district) per square meter. These data were published quarterly for all Vienna districts in the real estate commercial sector media and in the internet (ERESNET GmbH). We found that in beginning of 2009 a cut-off price of 3000 Euro per square meter to purchase a flat helped to divide Vienna, with its 23 districts, into two parts. 11 districts were below this threshold. The 9 inner city districts were not among these. The four rich districts according to their purchasing power were also not. The 15<sup>th</sup> district, found to be very poor in purchasing power was among the 11 below threshold.

Thus we found 12 districts to belong to the rich part, and 11 to the less affluent half. The rich 12 were the inner ones (Nr. 1 – 9) plus the three outer districts (13, 18, 19) which we also derived from the purchasing power study. The less affluent – we try to avoid the word poor for a city like Vienna – are the rest of 11 districts from the periphery.

Examining the VKI sampling of seven “private” GPs revealed that all seven had their office in the richer part of Vienna. For the 14 “contracted GPs” only 4 of 10, a minority had their office in the richer part.

Contracted GPs can only open their office in a district where the health insurance has planned it. The health insurance plan places offices according the population size, the inner districts are much smaller in area and have less population than the periphery ones. “Private” GPs can open their office where they want. They will tend to open their office near those people who can afford to pay out of the pocket, which will tend to live in the richer districts of Vienna. Thus the stark difference in the distribution of the VKI sample is very plausible and the stratified sampling seems to represent the GP distribution in Vienna well.

We further tested statistically the sample proportions from two perspectives. First we compared the complete sample of 21 GPs with the distribution of all GPs (2002 data) in Vienna in regard to less populated inner nine districts versus populous outer districts. Second we did the same for all 21 GPs in regard to 12 rich versus poorer 11 districts. In the complete sample the GPs in the inner less populated districts (Inner/outer districts, RR 0.80; CI 0.31-2.04) have a small trend to be underrepresented. GPs are slightly, but not significantly, overrepresented for the richer parts (Richer/ less affluent, RR 1.16; CI 0.5-2.71) at the same time when compared to the GP workforce distribution. Most probably this is caused by the intentional oversampling, as reported by VKI during the first interview, of seven “private GPs” instead of four. Both tests give an additional indication that the double stratified sampling resulted in a balanced random sample in regard to two aspects of district characteristics, “private GP” and “contracted GP” density.

#### Reference List

Ärzttekammer für Wien. "Praxisplan." Oct. 16, 2008. 2008.

ERESNET GmbH. "Wohnungspreise in Wien 4. Quartal 2008." Mar. 13, 2009. 2009. ERESNET GmbH

<http://www.immobilien.net/>.

RegioData Research. Kaufkraft der Österreicher steigt - merklich aber unbemerkt - Press Release. 1-

3. 29-7-2008. RegioData Research, 1060 Wien, Austria.

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