



URBAN–RURAL DIFFERENCES IN FERTILITY: CHILDBEARING INTEN- TIONS AND THEIR REALISATION IN VIENNA AND AUSTRIA

BERNHARD RIEDERER AND DARIA SHAPOVAL

IMPRINT

Vienna Institute of Demography,
Austrian Academy of Sciences
Dominikanerbastei 16
1010 Vienna, Austria
Tel. +43 1 51581 7702
vid@oeaw.ac.at
www.oeaw.ac.at/vid

DOI: <https://doi.org/10.1553/Urban-Rural-Differences-in-Fertility>

Graphic design: creativbox.at (Ch. Högl)
Published in February 2026

This research project was funded by the Cultural Affairs Department of the City of Vienna (MA 7) and conducted using data from the Austrian Micro Data Center (AMDC).

The AMDC is a research data infrastructure facility operated by Statistics Austria

that enables research using microdata prepared in compliance with data protection regulations (Fuchs et al., 2024). The conclusions drawn from the analyses do not reflect the views of the aforementioned institutions.

AI assistance was used for translation support, grammar and spelling checks, and phrasing improvements (ChatGPT and DeepL).

INTRODUCTION

URBAN–RURAL DIFFERENCES IN FERTILITY

For decades, demographic studies have shown that the fertility in urban regions of Europe is lower than in rural areas (e.g., Kulu & Washbrook, 2014; Trovato & Grindstaff, 1980). According to the *theory of the second demographic transition* (Lesthaeghe & van de Kaa, 1986; van de Kaa, 1987), metropolitan areas often appeared as forerunners of the value change that is considered responsible for the fertility decline in recent decades, while traditional norms and values showed greater persistence in rural areas. However, in the fertility decline not only the emergence and persistence of childbearing intentions are relevant, but also the opportunities to realise those intentions.

Regional differences in fertility persist to this day, although the intended number of children is not necessarily lower in urban than in rural areas. However, the realisation of short-term fertility intentions is more likely in rural regions. In cities, childbearing is more often postponed or abandoned (Riederer & Buber-Ennsner, 2019, 2021). Previous studies primarily analysed short-term fertility intentions and their realisation within the next three to four years. Empirical evidence on long-term fertility desires and their realisation is largely lacking. This is particularly relevant when considering urban–rural differences, as the fertility of women aged 35 and older plays a more significant role in large cities and metropolitan areas than in rural regions (Riederer & Beaujouan, 2023).

Research regularly emphasises the *importance of contextual factors* for urban–rural differences in fertility (e.g., Kulu, 2013; Riederer & Buber-Ennsner, 2019). They directly influence the possibilities of creating an environment deemed appropriate for raising children (e.g., housing conditions) or of realising other desires that “compete” with the fulfilment of childbearing intentions (e.g., career goals). Contextual factors also affect the *composition of a region’s population*. They can lead to specific migration patterns (e.g., young people moving from rural areas to cities, where educational and employment opportunities are more diverse).

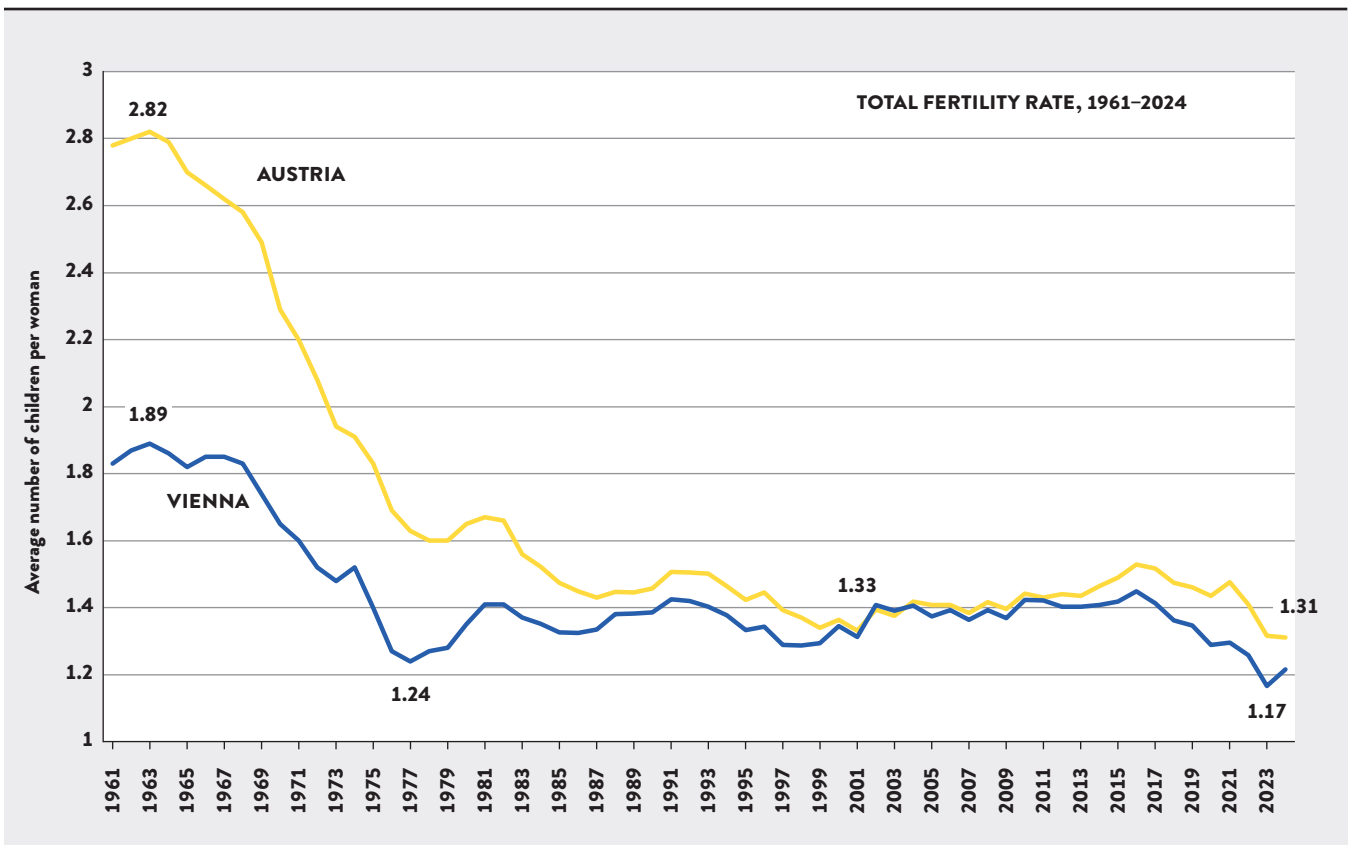


FIG. 1: COMPARISON OF FERTILITY RATE TRENDS IN AUSTRIA AND VIENNA

Source: Author’s own illustration; Data: Zeman et al. (2026); www.birthbarometer.at

ON FERTILITY IN AUSTRIA AND THE PRESENT STUDY

Vienna has long been characterised by a comparatively low birth rate within Austria. Already at the peak phase of the baby boom in the early 1960s, the fertility rate in Vienna was significantly lower than in Austria overall (1.89 compared to 2.82 in 1963). The birth rate in Vienna reached its lowest point in 1977 (1.24), before the total fertility rates for Vienna and Austria converged considerably in the 1980s and 1990s. In the 2000s, there were hardly any differences. However, this has changed again recently. In 2023, the birth rate in Vienna was only 1.17, and in 2024 it stood at 1.22.

An analysis of short-term fertility intentions showed that there were hardly any differences between the greater Vi-

enna area and smaller towns and rural regions of Austria in the proportion of men and women aged 21 to 45 who wanted to have (further) children within the next three years. However, among childless individuals, the proportion of those who did not want to have a child – neither within the next three years nor later – was highest in the greater Vienna area, at 23 percent. Moreover, an existing childbearing intention was realised within three years significantly less often in the greater Vienna area (32 percent) than in smaller towns and rural regions (41 and 43 percent, respectively). The greater Vienna area also had the highest proportion of individuals who had abandoned their childbearing intentions, at 23 percent (Riederer & Buber-Ennsner, 2021).

Against the background of postponed realisation, it should be noted that fertility at later ages plays a greater role in Vienna than in Austria as a whole (Fig. 2). In 2023, the share of fertility among women aged 35 and older already exceeded 30 percent of total fertility. This share has also increased significantly in recent years: in 2014, it was still 25 percent.

With this in mind, the present study aims to go beyond the short-term time horizon of three years. By combining data from the 2016 Microcensus with register data (vital statistics 2016–2023), it examines not only urban–rural differences in the total intended number of children, but also in the realisation of existing fertility intentions during the seven years following their measurement.

REALISATION OF FERTILITY INTENTIONS IN A EUROPEAN COMPARISON

Recent studies show that, across European countries, only 16 to 41 percent of individuals who intend to have a child within the next three years are able to realise this intention (Spéder & Bálint, 2024). In Austria, the corresponding share is around four in ten (Riederer & Buber-Ennsner, 2019). These short-term fertility intentions are realised less frequently among women of advanced reproductive age, parents of two or more children, the unemployed, and those facing financial difficulties. Cohabitation in a partnership is the main factor increasing the likelihood of realising fertility intentions. In addition, welfare-state spending on children and childcare, along with higher maternal employment, seem to facilitate realisation, while inflation and unemployment hinder it (Riederer & Buber-Ennsner, 2019; Spéder & Bálint, 2024).

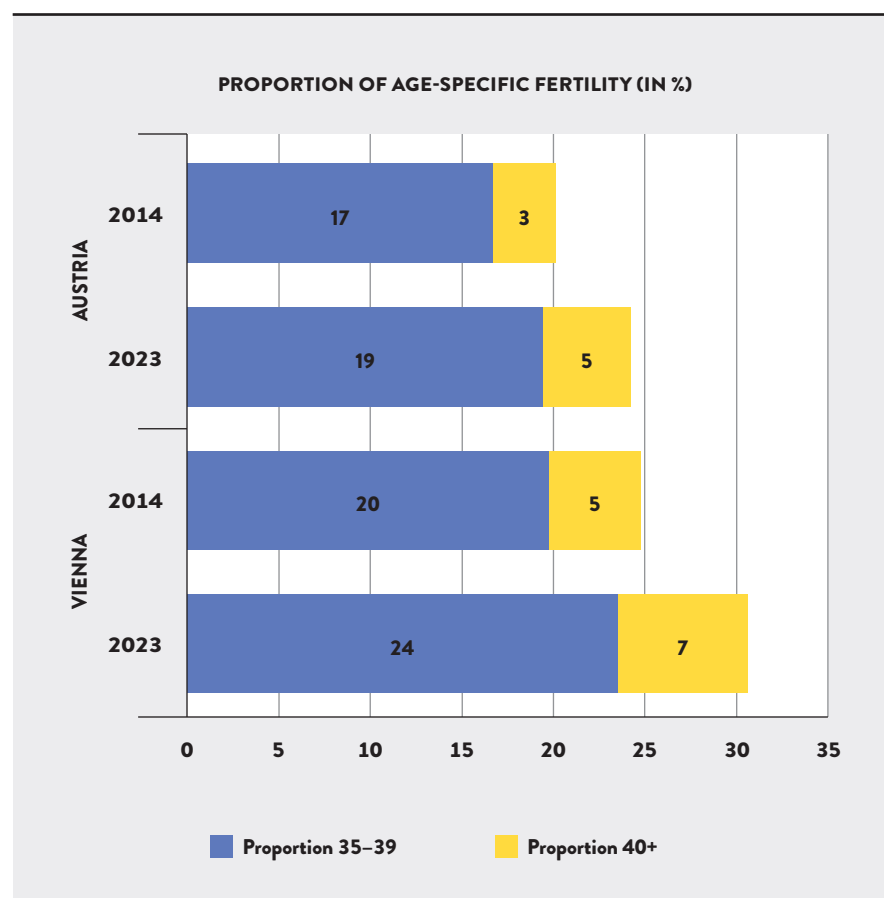


FIG. 2: PROPORTION OF FERTILITY OF WOMEN AGED 35–39 AND 40+ YEARS IN THE TOTAL FERTILITY RATE IN AUSTRIA AND VIENNA IN 2014 AND 2023

Source: Author's own illustration; Data: Eurostat

NUMBER OF CHILDREN AND FERTILITY INTENTIONS IN VIENNA, OTHER URBAN AREAS, AND RURAL REGIONS

The 2016 Microcensus survey indicates that, among women aged 19 to 45, fertility intentions are broadly similar in urban and rural areas. This is illustrated using a commonly applied Eurostat classification (2019), which takes into account population size and density and distinguishes between densely populated cities, smaller towns and suburbs, and thinly populated rural areas.

While 47 percent of women in Vienna and 53 percent in other cities reported fertility intentions, only 41 percent did so in smaller towns and suburbs as well as in thinly populated rural areas. Moreover,

six to seven percent of women in cities intended to have three or more (additional) children, compared with just three percent of women in less densely populated areas. This is primarily because women in this age group living in more rural regions more frequently already had children. In urban areas, around half of the women had not yet become mothers, compared with just over one-third in rural areas.

An analysis of the total intended number of children, calculated from the number of children already born and further intended children, shows only minor urban–rural differences (Fig. 3). In Vienna, other cities,

and smaller towns and suburbs, the average total intended number of children was just over 1.8. In rural areas, it was nearly two. The higher total intended number of children in rural areas is primarily attributed to the smallest localities. Women from places with up to 2,000 inhabitants desired slightly more than *two* children in total, of which 1.3 had already been born.

Figure 3 further shows that, on average, women aged 19 to 45 living in rural areas have slightly more children than their counterparts in urban areas. The average number of children already born to women was 1.1 in small towns and suburbs, 1.2 in rural areas, 0.9 in Vienna, and 0.8 in other cities. In cities, therefore, the total fertility intentions are more strongly shaped by intentions or desires yet to be realised.

In Vienna in 2016, around 51 percent of women aged 19 to 45 already had children (34 percent had two or more). About 47 percent wanted to have children in the future: 17 percent desired (additionally) at least one child, 24 percent at least two and 6 percent three or more. On average, the number of children already born and the number of further intended children were roughly equal, at about 0.9 children per woman each. Within Vienna, the inner districts (1st–9th district) occupy a special position: Sixty percent of women there are without children, 14 percent have one, and 26 percent have two or more; meanwhile, 37 percent intend to have two or more (additional) children.

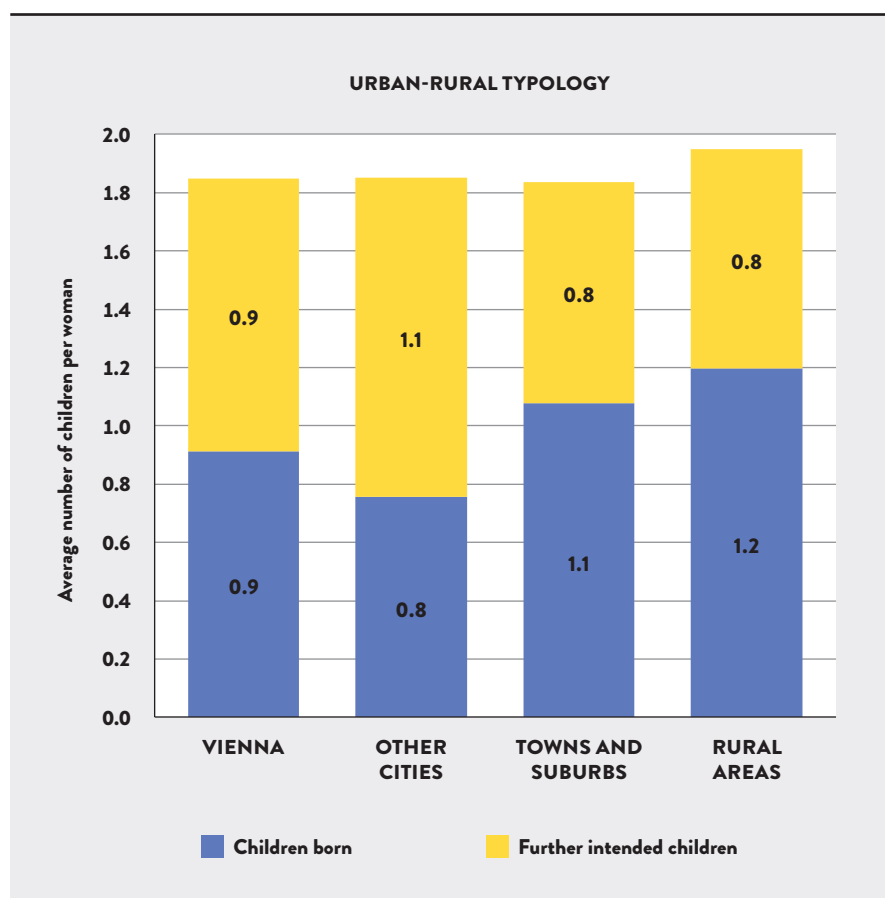


FIG. 3: TOTAL INTENDED NUMBER OF CHILDREN AMONG WOMEN AGED 19 TO 45 IN AUSTRIA (CHILDREN ALREADY BORN AND FURTHER INTENDED CHILDREN)

Source: Author's own illustration; Data: Microcensus 2016 (supplementary survey on fertility intentions)

FERTILITY INTENTIONS AND THEIR REALISATION IN URBAN AND RURAL AREAS

This section addresses fertility intentions reported by women (aged 19–45) in 2016 and their realisation by 2023. To analyse urban–rural differences, a distinction is made between (1) Austria’s ten largest cities, (2) other urban centres, (3) regional centres and the surrounding areas of urban centres, and (4) rural regions (see Statistics Austria, 2021). The analysis also accounts for mobility to cities (1 or 2) and to more rural regions (3 or 4).

In 2016, the proportion of women who had not yet had children was particularly high among those living in one of the ten largest cities (48 percent) or among women who moved in the following years (over 60 percent). These are also the groups that most frequently desired (additional) children. At 68 percent, the proportion of women with fertility intentions was particularly high

among those who moved to a more rural region. Women living in regional centres and the surrounding areas of urban centres had most often already completed their family planning. Only 31 percent reported fertility intentions in these areas.

The proportions of women who had at least one live birth by 2023 are mostly between 20 and 25 percent. Only among women who moved to more rural regions is the proportion markedly higher, at 40 percent. As expected, the proportions of women who had at least one child within seven years were also much higher among those who reported fertility intentions in 2016. Moreover, there are urban–rural differences in the fulfilment of childbearing intentions: over 50 percent of women in more rural regions realised their fertility intentions, compared with just 40 percent

of women in the ten largest cities and 32 percent of those who moved to cities. Interestingly, women from smaller urban centres (55 percent) had the second-highest realisation rate after women from regional centres and the surrounding areas of urban centres (56 percent).

Given their younger age, it is unsurprising that women who moved later had not yet had any children in 2016 and reported higher fertility intentions. Due to greater educational and employment opportunities in larger cities, the likelihood of realising fertility intentions was expected to be lower among women living in or moving to cities. Even in the absence of previously reported fertility intentions, women who relocated to more rural regions had a high probability of childbirth, underscoring the significance of regional context.

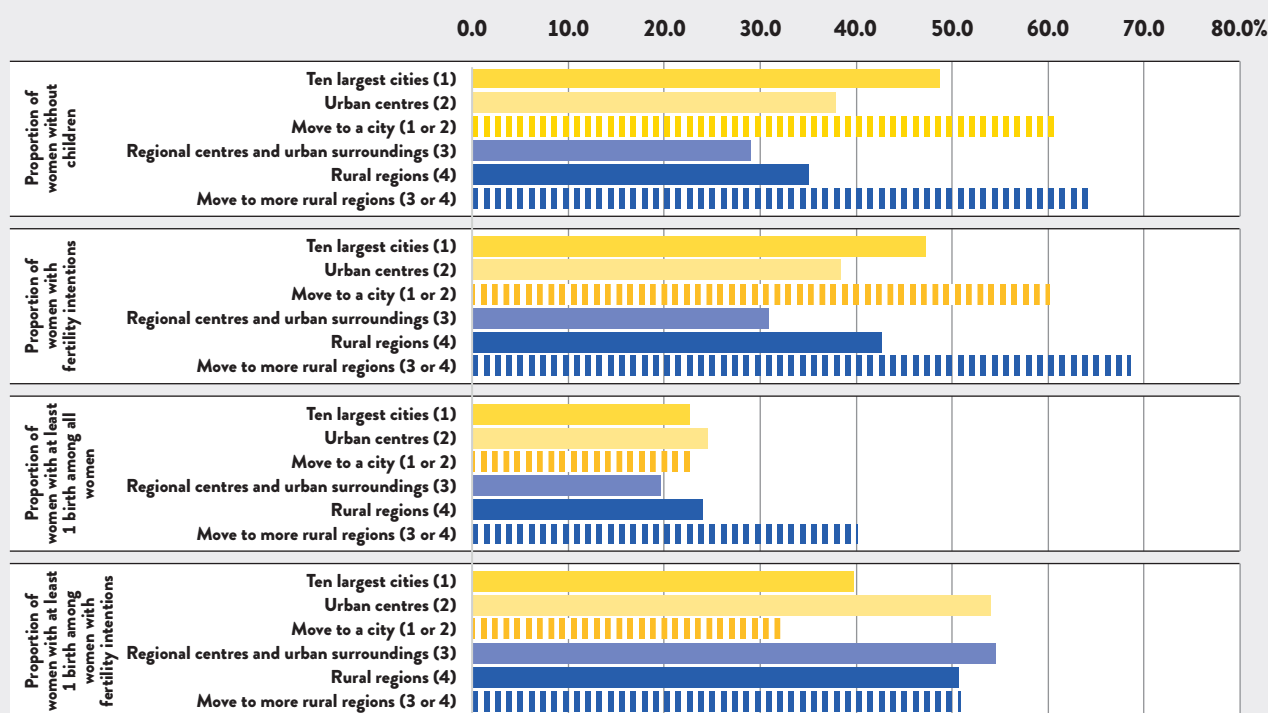


FIG. 4: CHILDBIRTH, FERTILITY INTENTIONS AND REALISATION AMONG WOMEN AGED 19–45 IN AUSTRIA (OBSERVATION PERIOD: 2016–2023)

Source: Author’s own illustration; Data: Microcensus 2016 (supplementary survey on fertility intentions) and registry data of the AMDC (STF and AEST REGZ)

WHAT EXPLAINS DIFFERENCES IN REALISATION BETWEEN URBAN AND RURAL AREAS?

In the following analysis, a distinction is made between (1) Vienna, (2) other large urban centres with 100,000 inhabitants or more, (3) medium-sized and small urban centres, regional centres, and the surrounding areas of urban centres, and (4) rural regions (see Statistics Austria, 2021). The first two categories are partially classified as “large urban centres,” and the last two as “more rural regions.”

The difference in the realisation between large urban centres (40.0 percent) and more rural areas (49.8 percent) amounts to approximately 9.8 percentage points. This gap can be almost entirely explained by differences in the composition of urban and rural populations. Large urban centres have greater proportions of people who are still in education, live alone, and do not yet have children. Women in educa-

tion and those living alone tend to realise their fertility intentions less often, while women with one child who intend to have a second exhibit relatively high realisation probability. Moreover, the average living space available per person is lower in large urban centres than in more rural regions. This also contributes to the lower realisation. The most important factor explaining the difference between large urban centres and more rural areas is the higher proportion of women in education in cities, which accounts for 2.9 percentage points of the 9.8 percentage-point difference. Other factors, such as differences in age structure or the scope of fertility intentions, play little or no role in the lower realisation of fertility intentions in large urban centres, particularly as the proportion of individuals desiring two or more (additional) children is higher in cities than in rural areas.

In Vienna, 35.1 percent of women with fertility intentions gave birth to at least one child, representing a 12.3 percentage-point lower realisation compared with the rest of Austria. Compositional differences in being in education, housing space, parenthood status, and the proportion of one-person households explain a substantial part of this gap. Employment levels also play a role: women with fertility intentions are more likely to realise them if they work full-time (more than 32 hours per week). However, while the overall share of women in full-time employment is higher in Vienna, this pattern does not hold for women with fertility intentions.

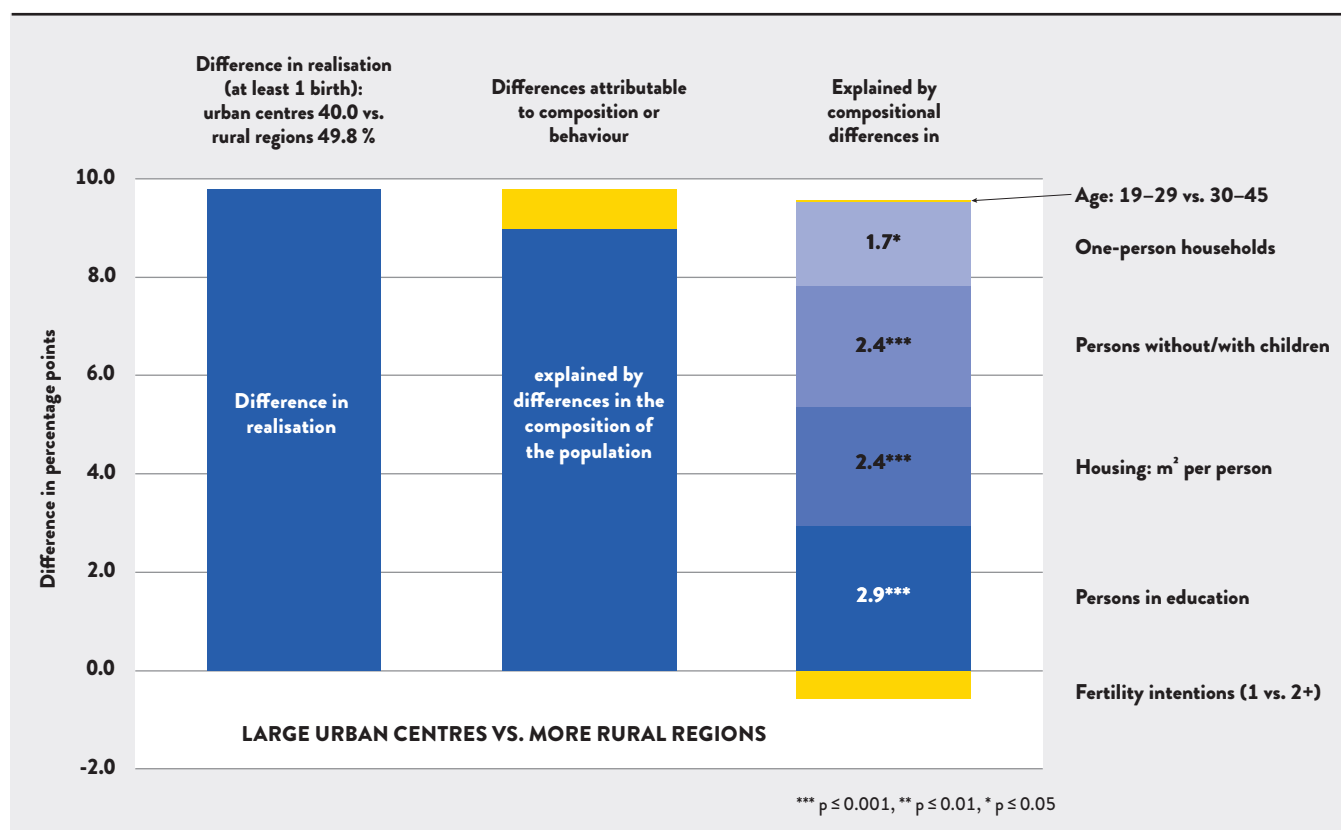


FIG. 5: HOW DIFFERENT CHARACTERISTICS OF WOMEN WITH FERTILITY INTENTIONS EXPLAIN THE URBAN–RURAL GAP IN THEIR REALISATION (DECOMPOSITION ANALYSIS)

Source: Author’s own illustration; Data: Microcensus 2016 (supplementary survey on fertility intentions) and registry data of the AMDC (STF and AEST REGZ)

WHO IS MORE LIKELY TO REALISE FERTILITY INTENTIONS FASTER AND MORE FREQUENTLY?

The present study examines the temporal dynamics of realisation using two time axes. The analysis by observation months captures the duration from the survey to the realisation of fertility intentions. The analysis by calendar months allows temporal fluctuations in the probabilities of birth during periods of crisis to be taken into account. Results based on observation months indicate that realisation probabilities decline with increasing duration, as expected, reflecting the age-related biological decline in realisation likelihood. Against this backdrop, it is particularly noteworthy that women in rural regions realise their fertility intentions considerably faster than women in large cities. Although the probability of

realisation is initially significantly lower – especially in Vienna – these differences increasingly converge over time.

In the analysis by calendar months, elevated birth probabilities are observed in the third quarter of 2017, 2018, and 2021, consistent with the typical Austrian seasonal pattern (Fig. 6). In other years, the COVID-19 pandemic (2020), the war in Ukraine, and rising living costs (from 2022 onwards) may have exerted an inhibiting effect on childbirth. Considering periods of higher and lower childbirth probabilities (Fig. 7) shows that women in more rural regions exhibited higher realisation odds, particularly up to the third quarter

of 2018. In 2023, especially low realisation probabilities are observed among women in Vienna, possibly reflecting sharply increased living costs.

In total, around 12 percent of women in Vienna who expressed fertility intentions in 2016 had given birth by the end of 2018. By the end of 2023, this share had increased to 34 percent. In medium-sized and smaller urban centres, regional centres, and the surrounding areas of urban centres, 30 percent of women had realised their fertility intentions by 2018. Over the subsequent years, as in Vienna, an additional 22 percentage points were added, bringing the figure to 52 percent in 2023.

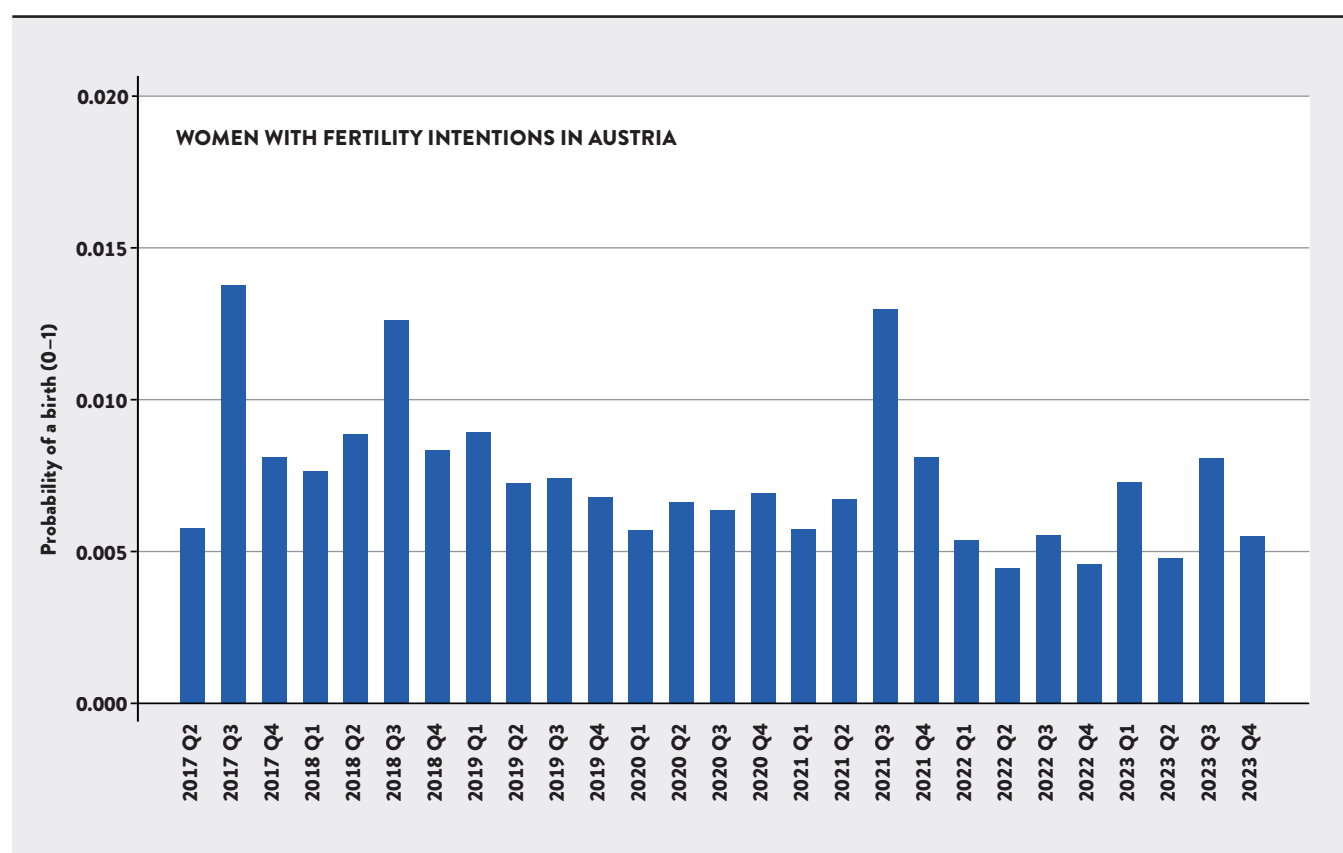


FIG. 6: PROBABILITIES OF A LIVE BIRTH AMONG WOMEN WITH FERTILITY INTENTIONS OVER TIME (QUARTERLY)

Source: Author's own illustration; Data: Microcensus 2016 (supplementary survey on fertility intentions) and registry data of the AMDC (STF and AEST REGZ)

Considering the statistical chances of women who had not yet had a (further) child, a clear difference emerges: the cumulative probability of actually having a (further) child by the end of 2023 was around 40 percent in Vienna. In medium-sized and smaller urban centres, regional centres, and the surrounding areas of urban centres, the probability of having a child by that point was considerably higher, at 69 percent.

Among women who intend to have children, those aged 19 to 34 at the beginning of the observation period are considerably more likely to realise this intention in the following years than women aged 35 to 45. For instance, women aged 19 to 24 have odds of childbearing that are six times higher than those of women aged 40 to 45. Notably, women under 30 show especially high realisation chances in rural areas, whereas for women aged 30 to 34, urban–rural differences are negligible.

From age 35 onward, women residing in Vienna again face lower realisation chances than those in rural areas, a pattern that is not observed for other large urban centres.

Finally, when examining urban–rural differences, the domains of migration, education, and housing are of particular relevance. First, the results indicate that women whose fathers were born in third countries tend to have a first birth earlier and display higher overall probabilities of realising their fertility intentions. This pattern likely reduces urban–rural differences, as urban areas have a higher proportion of individuals with a migration background. Second, among women with fertility intentions, those with higher levels of education show, on average, higher realisation probabilities. This is mainly because women with tertiary education aged 30 or older tend to realise their intentions relatively quickly. However, although the share of

highly educated women is larger in urban areas, this factor does little to reduce the urban–rural gap. This is because highly educated women realise their fertility intentions more rapidly, particularly in rural regions. Third, among women with childbearing intentions, those who were already living in owner-occupied or cooperative housing at the time of the survey exhibit substantially higher realisation odds than women living in rental housing. This pattern holds in both urban and rural areas. In Vienna, however, women in owner-occupied or cooperative housing primarily realise their intentions more quickly (with a cumulative likelihood of 28 percent versus 19 percent by the end of 2019), but not necessarily more often (46 percent versus 45 percent by the end of 2023). Cooperative housing may therefore represent a promising avenue for creating conditions that support the realisation of fertility intentions.

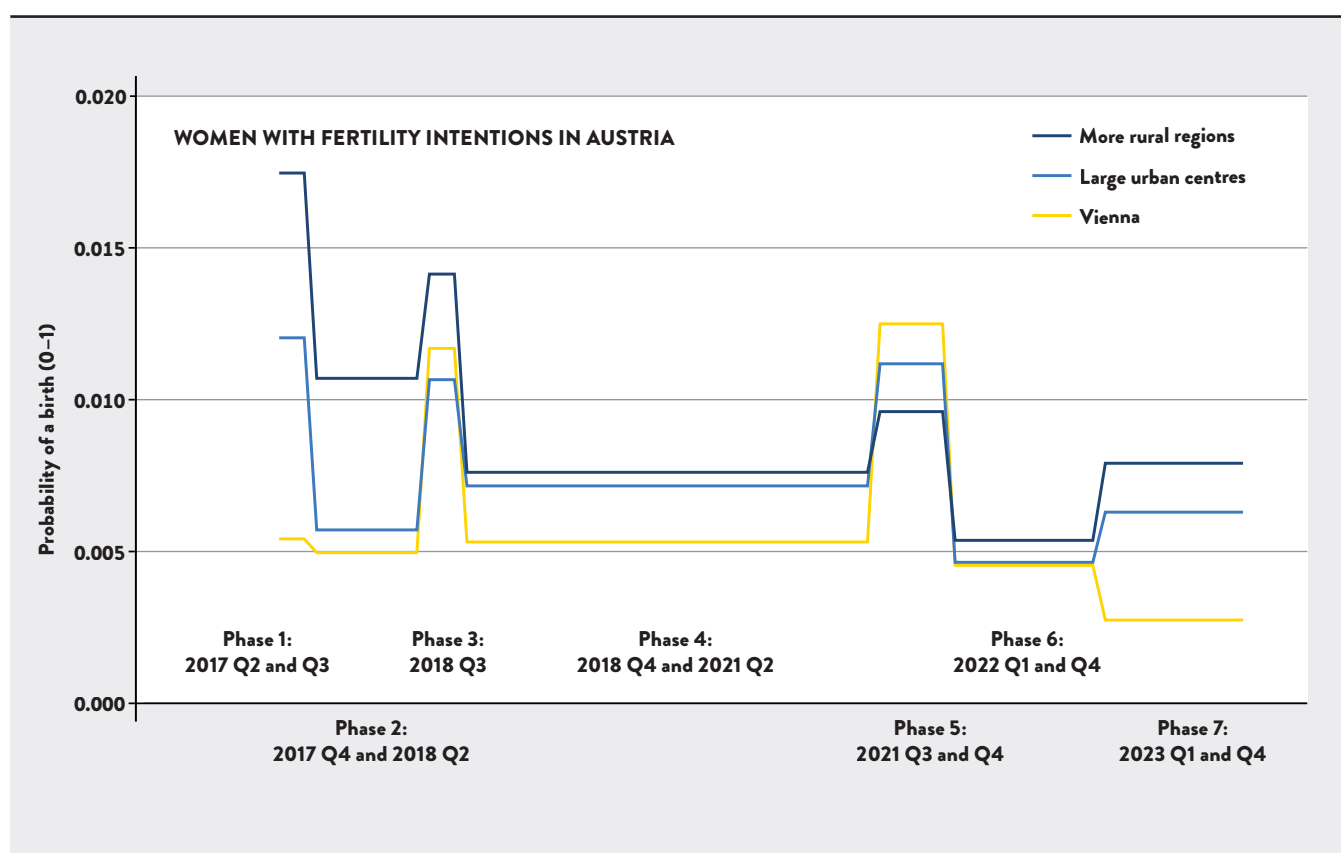


FIG. 7: URBAN–RURAL DIFFERENCES IN THE REALISATION OF FERTILITY INTENTIONS OVER TIME (QUARTERLY)

Note: Conditional probability from discrete-time model; Source: Author's own illustration; Data: Microcensus 2016 (supplementary survey on fertility intentions) and registry data of the AMDC (STF and AEST REGZ)

CONCLUSION: ON THE REALISATION OF FERTILITY INTENTIONS IN URBAN AND RURAL AREAS

This study examined differences in the realisation of fertility intentions previously expressed over a seven-year period. While no substantial urban–rural differences are observed in births among women who do not intend to have (additional) children, such differences are pronounced among women with fertility intentions. In Vienna, fertility intentions were realised less frequently than

in other large cities and rural areas. In particular, individuals who moved to a larger city during the observation period exhibited lower realisation rates.

Urban–rural differences in realisation are largely driven by variations in population composition across regions. Compared with rural regions, urban areas have a higher proportion of wom-

en with fertility intentions who are still in education or who live alone. Housing conditions also play an important role, as both dwelling size and tenure status likely influence the realisation of existing fertility intentions. Finally, the findings suggest that the crises of recent years have had a particularly strong impact in Vienna, with especially pronounced effects observed in 2023.

REFERENCES

- Eurostat* (2019). **Methodological manual on territorial typologies** (2018 edition). Publications Office of the European Union. <https://doi.org/10.2785/930137>
- Fuchs, R., Göllner, T., Hartmann, S. & Thomas, T. (2024). **Fostering Excellent Research by the Austrian Micro Data Center (AMDC)**. *Jahrbücher für Nationalökonomie und Statistik*, 244(4), 433–445. <https://doi.org/10.1515/jbnst-2023-0043>
- Kulu, H. (2013). **Why do fertility levels vary between urban and rural areas?** *Regional Studies*, 47(6), 895–912. <https://doi.org/10.1080/00343404.2011.581276>
- Kulu, H., & Washbrook, E. (2014). **Residential context, migration and fertility in a modern urban society**. *Advances in Life Course Research*, 21, 168–182. <https://doi.org/10.1016/j.alcr.2014.01.001>
- Lesthaeghe, R., & van de Kaa, D. J. (1986). **Two Demographic Transitions** [Two demographic transitions]. In R. Lesthaeghe & D. Van de Kaa (Eds.), *Bevolking: Groei en Krimp, Mens en Maatschappij* [Population: Growth and shrinkage, people and society] (pp. 9–24). Van Loghum-Slaterus.
- Riederer, B., & Beaujouan, É. (2023). **Explaining the urban–rural gradient in later fertility in Europe**. *Population, Space and Place*, 30(1), e2720. <https://doi.org/10.1002/psp.2720>
- Riederer, B., & Buber-Ennser, I. (2019). **Regional context and realization of fertility intentions: The role of the urban context**. *Regional Studies*, 53(12), 1669–1679. <https://doi.org/10.1080/00343404.2019.1599843>
- Riederer, B., & Buber-Ennser, I. (2021). **Familie in der Stadt und am Land: Zur Bedeutung des regionalen Kontextes für die Realisierung des Kinderwunsches in Österreich**. [Family in urban and rural regions: The relevance of regional context for the realisation of childbearing intentions in Austria]. *Österreichische Zeitschrift für Soziologie*, 46(1), 69–91. <https://doi.org/10.1007/s11614-020-00437-6>
- Spéder, Z., & Bálint, L. (2024). **Realization of Short-Term Fertility Intentions in a Comparative Perspective: Which Macro-Level Conditions Matter?** *Population Research and Policy Review*, 43(5), 72. <https://doi.org/10.1007/s11113-024-09913-3>
- Statistics Austria* (2021). **Urban-Rural-Typologie, Stand 2021: Methodik**. [Urban-Rural Typology, Status 2021: Methodology]. Statistics Austria. Available at <https://www.statistik.at/fileadmin/pages/453/urbanRuralTypologie.pdf>
- Trovato, F., & Grindstaff, C. F. (1980). **Decomposing the urban-rural fertility differential: Canada 1971**. *Rural Sociology*, 45(3), 448–468.
- van de Kaa, D. J. (1987). **Europe's Second Demographic Transition**. *Population Bulletin*, 42(1), 1–59.
- Zeman, K., Sobotka, T., Gisser, R., Winkler-Dworak, M., Berghammer, C., & Riederer, B. (2026). **Birth Barometer: Monitoring Fertility in Austria**. Vienna Institute of Demography. Available at www.birthbarometer.at