OXFORD

Social Forces, 2024, **00**, 1–23
https://doi.org/10.1093/sf/soae163
Original Article

A room of one's own? The consequences of living density on individual well-being and social anomie

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The global housing affordability crisis and COVID shutdowns have put living space inequality back on the political agenda. Drawing on Durkheim's theory of anomie and density, this paper argues that on how many square meters a society lives matters for how stable or anomic it develops. Using data from the Swiss Household Panel, we examine the selection, short-term, and dynamic effects associated with transitions to overcrowded and under-occupied dwellings. We conceptualize these transitions as disruptive events that require a reconfiguration of personal and social equilibria in individuals' lives. While overcrowded housing leads to a heightening of emotional states and more tense internal household dynamics, people respond by adjusting their leisure activities and restructuring their support networks from strong to weak ties. Conversely, moving to an under-occupied dwelling is associated with melancholic emotional stabilization, but improves household balance and leads to consolidation of the core network of relatives at the expense of outer social circles. We conclude that the classical characterization of anomie as a mismatch between personal means and societal ends should be understood as a multifaceted phenomenon in which meso-level social networks can be a crucial means to cope with disruptions that arise at other levels.

Key words: overcrowding; anomie; strong ties; weak ties; panel data.

Introduction

With rising housing prices and urban rents across the OECD world, many cities have seen an increase in the number of crowded households over the last decade. This became particularly noticeable during COVID shutdowns with the accompanying obligation to work from home and it has put the unequal distribution of living space (Dwyer 2014; Kamis et al. 2021)—a key topic of the 19th century housing question—back on the research and policy agenda. With the century-long expansion of living space per capita (Eichholtz, Korevaar, and Lindenthal 2022), fueled by suburbanization and a shift to larger single-family houses (Carnahan, Gove, and Galle 1974), overcrowding long seemed to be a problem of late urbanizing and (post-)socialist countries

Received: November 3, 2023. **Revised:** September 27, 2024. **Accepted:** October 30, 2024

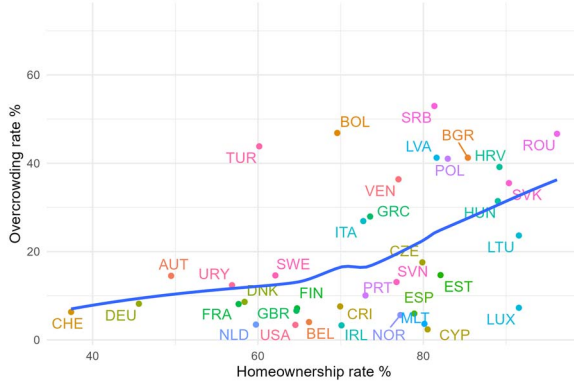

Figure 1. Overcrowding rates by countries' homeownership rates, average 2010–2022.
Note: Overcrowding is measured as percentage of persons in housing units with more than one person per room in the US (American community survey), with adjustments for children in European countries (Eurostat data). Latin American numbers are overestimates (Cepal), referring to more than two persons per room. Homeownership data are taken from Kohl (2017).

(Soaita 2014) or of particular populations in prisons, hospitals, or schools, and has rather been ignored by the housing literature with its equally important focus on homeownership, evictions, or segregation of different income or racial groups (Fischer and Lowe 2014; Hepburn, Louis, and Desmond 2023; Hwang, Hankinson, and Brown 2014). On how many square meters someone lives, however, is not only important for their housing conditions and, as Virginia Woolf (1929) argued, for emancipation, intellectual flourishment, or individual well-being, but also for broader questions of social integration. It is no coincidence that Émile Durkheim saw increasing density, both moral and physical, not only as the cause of further social differentiation, but also of various anomic phenomena (Durkheim 1984[1893]). While the existing empirical literature on crowding has mostly documented adverse *individual* health and education effects of both overcrowding and under-occupation, the short- and long-term *social* consequences have so far been understudied.

To examine the effects of physical density on individual and social life, we look at two important transitions in people's life trajectory: moving into overcrowded housing conditions and moving into under-occupied conditions. We focus on the Swiss case for both theoretical and pragmatic reasons. From a theoretical perspective, Switzerland is an extreme case—as figure 1 suggests—because it uniquely combines one of the lowest overcrowding rates (6.4%) and highest under-occupation rates in Europe (Eurostat 2023) with the lowest homeownership rate in the OECD world. Generally, overcrowding tends to affect tenant households, particularly in homeownership nations such as the US (Solari and Mare 2012). Therefore, if living space effects are found in Switzerland, they should *a forteriori* be even more relevant elsewhere. From a pragmatic perspective, the Swiss Household Panel (SHP) is the only *longitudinal* survey that simultaneously provides housing density measures and the dependent variables we want to examine, that is, both individual outcomes and social ties. Panel data prove crucial to distinguish between selection and causal effects of over- and under-occupation. We also exploit these data to explore how the attitudinal trajectories associated with these living conditions evolve over time, thus distinguishing between short- and long-term effects.

Our empirical findings show that transitions to over- and under-occupation are disruptive events that create personal pressures within the household, which in turn lead to compensatory reconfigurations outside the household. We find that for most people, moving into overcrowded housing is a temporary phase in the life course that lasts no longer than a few years and is associated with heightened emotional responsiveness. In the short term, habits inside and outside the household are unsettled, but for individuals who remain in overcrowded housing for

more than a few years, satisfaction with the division of household tasks stabilizes and leisure activities are adjusted to make them even more satisfying than before the transition. While the under-engagement of such individuals in political affairs is unaffected, this adjustment is accompanied by a realignment of social support networks, comprising a shift from relatives to the weaker ties of friends, neighbors, and especially colleagues. Conversely, the transition to under-occupation results, in most cases, in a permanent living situation associated with a sad emotional stabilization, which, however, significantly improves satisfaction with the way domestic work is shared among partners. At the same time, these individuals clearly shift their engagement and support networks toward their inner social circles. Their interest in politics and attachment to friends decline, while support from relatives significantly increases.

Both extreme overcrowding and under-occupation can thus be associated with potentially undesirable, albeit different outcomes. As the Anna Karenina principle goes: "All happy families are alike; each unhappy family is unhappy in its own way." The potential over-integration through overcrowding leads to a decline in individual well-being and the nuclear family, while improving outward socialization. Under-integration, that is, moving into under-occupation, by contrast, improves individual, subjective, and family outcomes at the cost of outward socialization and depoliticization. While the classical characterizations of anomie developed by Durkheim (1984[1893]) and Merton (1938) emphasize a mismatch between the resources available to individuals at the micro level and social goals and values at the macro level, our findings underscore the importance of also considering social support networks at the meso level to find equilibria that allow people to cope with disruptions at different levels. These findings go beyond existing research in two important ways: first, they extend beyond individual, objective health outcomes and include subjective and social integration dimensions; second, while panel data have already been used in existing research (e.g., Lopoo and London 2016), our study is the first to include a long-term dynamic dimension in examining the slow-moving effects of crowding.

In the next section, we present the Durkheimian theoretical angle and existing overcrowding research. We then introduce the data and methods, before delving into the empirical findings. The discussion and concluding sections highlight the main sociological takeaways, the limitations of the paper, and the research avenues it opens.

Overcrowded vs. under-occupied social integration? Literature review

The idea that the increase in physical density through intensifying urbanization has an impact on social integration has been a long-standing concern of the anti-urban critique in the US and Europe, ranging from Jefferson and Riehl to Booth and Spengler, respectively (White and White 1977[1962]). These largely conservative critics saw denser cities as being associated with declining health, fertility, and morality, as opposed to the more idealized, dispersed living in the countryside. This critique also influenced the founders of sociology, with the Settlement House movement and Chicago Sociology directly addressing the consequences of dense urban life (Lees 1985). Louis Wirth saw urban density as the reason for the appearance and the lack of awareness of the specific problems of modern life (Wirth 1938). Accordingly, the density of the city brings with it a diversification and specialization of social interactions, leading to anonymous, superficial, and fleeting social ties. The weakening of intimate social networks is then seen as the cause of increasing instability, mobility, and insecurity. On the European continent, it was probably Georg Simmel who most frequently highlighted the effects on individual mentality associated with urban life, which involved both a sense of refined aesthetic taste and a state of intense nervousness (Simmel 1995[1903]). This ambiguity of cities' impact on individuals is also found in Émile Durkheim's *Division of Labor*, where physical density (in combination with "moral density", i.e., intensified social interactions) is seen, on the one hand, as a motor of further social integration by forcing individuals to specialize in niches of competition and interact through modern contracts. On the other hand, Durkheim also links the increase of density over the course of urbanization with the rise of anomic phenomena, most notably life dissatisfaction, as well as suicide.

In the Durkheimian tradition, many studies investigated the effect of urbanization and crowding on individuals, families, networks, and social integration (Edwards et al. 2019), often contesting the simple equation that cities destroy community relationships (Fischer 1982). This research suggests that denser living conditions may not have unambiguous effects on social life, but rather alter the mode of integration. Reversely, as shown in studies of social capital (Nguyen 2010; Lannoo et al. 2012), lower density environments, such as sprawling suburbs, do not completely undo social relationships, but rather change their nature and the frequency of their occurrence. The effects of density and crowding, in particular on individuals, have often been studied in terms of actual physical density, that is, how many animals, prison inmates, or individuals populate a given area. In the literature on urban density, many studies look at area effects of the number of people per square kilometer/mile or per building block on impacts measured at the regional level or, more recently, even at the micro level (Lai et al. 2021).

A Web of Science search[1] (last updated on March 11, 2023) for "(over)crowding" in conjunction with "housing" in abstracts, topics, or titles (but not "crow(ding) out") reveals a total of 679 studies (as compared to 421 studies on prison/jail, 2857 studies regarding hospitals/emergency units, 504 studies on rats/animals, 319 studies regarding (over)tourism and 1690 on transportation/mobility). Of the 679 studies on residential crowding, "crowding" is often a descriptive theme, but not strictly used as a dependent or independent variable and only four of the studies were published in generalist sociology journals (not including interdisciplinary social science/medical journals). Among these studies, we zoomed in on those using residential crowding as an independent variable to predict different individual and social outcomes.

From Europe's 19th century "housing question" to the current reports of the UN-Habitat division on urbanization in the Global South, too many inhabitants living on too few square meters or in too few rooms have represented social and public health concerns. Not surprisingly, therefore, most of studies we found are in public health or psychology—particularly those cited more than 100 times—and deal with the health consequences of crowding. These studies find positive associations between overcrowding and worsening child health (size, weight, overall health) (Booth and Johnson 1975), depression (Pengcheng et al. 2021), isolation (Altindag, Erten, and Keskin 2022), historical infant mortality (Cage and Foster 2002), but also reveal negative effects on educational performance in the US (Lopoo and London 2016), in Europe (Goux and Maurin 2005), and Latin America (Contreras, Delgadillo, and Riveros 2019) as well as less satisfaction with life (Foye 2016). The Swiss case has also been the subject of studies, which show that crowding is associated with reduced chances of higher education (Bourassa, Haurin, and Hoesli 2016), homicides/suicides, and mortality (Panczak et al. 2013). The effects of the opposite of overcrowding, that is under-occupation, have mostly been discussed in terms of the "empty nest" syndrome, largely focusing on negative effects on individuals, such as a decline in general health, emotional distress, physical pain, and lack of vitality, as a meta-study from China points out (He et al. 2020).

We are not aware of any research that explicitly examines the relationship between overcrowding and/or under-occupation and social and political integration. In particular, Durkheim's (1984[1893]) and Merton's (1938) classical definitions of anomie focus on the contradictions between the resources available to individuals at the micro level and the aspirations valued by society at the macro level. The role of meso-level social networks as forces mitigating or exacerbating this mismatch is either not theorized at all or, in Merton's perspective, equated with societal pressures. However, if we consider the transition to overcrowded or under-occupied housing as a disruptive event in an individual's life, the strain and breakdown theories of collective action (Buechler 2013; Jasper and Poulsen 1995; Useem 1998) suggest that individuals mobilize their social ties to cope with a new challenging situation, either because these ties are available when needed (opportune mobilization) or because they have the best knowledge and resources (targeted mobilization) to deal with a given problem (Small 2013). While existing research highlights that multiple support networks are required when experiencing challenging

events (Moreton, Kelly, and Sandstrom 2023), the relationship between the two transitions we examine in this case is qualitatively inverse and they may require different support networks, both in qualitative and quantitative terms. While the different social pressures exerted by family, school, and work are the main structural foci for the development of social ties (Feld 1981), social commitments above a certain threshold may impose time constraints and psychological burdens that limit the cumulative nature of social engagement (Allardt et al. 1958). Such constraints lead to a trade-off between strong and weak ties. Weak ties generally require less time to maintain than strong ties, but they are more heterogeneous and numerous. Embeddedness in any network has curvilinear positive effects (Uzzi 1996). We are interested in pinpointing the where on this inverted U-shaped curve of social integration over- and under-occupation are located and what reconfigurations of social networks they may imply.

For both transitions, there are competing expectations that have to be considered. Regarding overcrowding, on the one hand, increasing density in the household can be seen as an event that strengthens household ties physically and emotionally. Increased familism (Diaz and Niño 2019), which may include not only household members but also close relatives, may be one way to respond to this challenge. At the same time, greater physical proximity may lead to excessive strain on strong ties with other household members and relatives, making them feel "suffocated" (Finkel et al. 2014). While strong ties require a good cognitive balance between the individuals involved (Granovetter 1973), the constrained nature of face-to-face interactions in a crowded environment may not meet this requirement, especially if the household includes individuals of different generations (Szydlik 2008). If this is the case, we would expect more of a redistribution of social ties toward weaker, cross-cutting social circles that individuals are likely to develop outside the household. Weaker ties have been shown to mitigate the potentially oppressive role of "excessively strong ties" by taking on their role in certain domains (Marsiglio and Scanzoni 1995). Weaker ties to friends and colleagues may be called upon particularly when there is a fear of judgment (Goldsmith 2004), which is especially the case for younger members of a household, or when the problems in question are associated with stigma, such as health issues (Wright and Miller 2010).

As far as under-occupation goes, on the one hand, it can be assumed that the greater availability of space may serve as a blueprint for other social relationships and lead to an increased focus on weak ties, including outside the household. Focusing on the specific case of people living alone, Klinenberg (2012) shows that living alone does not imply feeling lonely or being less socially engaged. On the other hand, it can also be expected that the increased availability of space will lead to feelings of loneliness and a lack of social integration, potentially leading to a rebalancing toward stronger ties within the household and with close relatives. A similar reasoning may apply to participation in social and political affairs, with potentially conflicting social forces either pushing toward greater involvement in the outside world or toward greater isolation from reality outside the household.

In light of all this, we identify two clear research gaps in the existing literature on (over)crowding: first, there is a lack of sociological studies on social outcome variables (other than loneliness and marital life), that is, the Durkheimian kind of social integration that results from different densities. Second, there is a methodological gap with most macro- and even micro-level studies using cross-sectional or experimental evidence, but very few studies exploring long-term effects. The small number that do exist show, for instance, that exposure to crowding during high school years may have long-term consequences for graduation results (Lopoo and London 2016). Yet, to our knowledge, there are no longitudinal micro-level studies tracing the long-term effects of (over)crowding. This is rather surprising, given that crowding is not a shock-like event, but rather a slow-moving living condition that may last multiple years for certain households. The reconfigurations of social networks may reveal how coping with over- and under-occupation implies an adaptative process the outcomes of which may only become visible over time.

A longitudinal perspective: Data and methodological elements

The Swiss household panel: Data

To investigate the impact of overcrowding and under-occupation on individual and social outcomes, we rely on data from the SHP. The focus on Switzerland is motivated by the substantive reasons described above, but also because the SHP is the best representative household panel study for the research question(s) we examine, providing data for both the independent and dependent variables we are interested in. We use all data years in which the required variables are available, which enables us to cover the period between 1999 and 2020.

Looking at the independent variables of interest, that is, the transitions to overcrowding and under-occupation, we broadly follow the standard definitions of over and under-occupied dwellings (Eurostat 2023) and define both transitions in terms of living space per household member. We focus on the number of available rooms[2] per person[3] and define overcrowded households as those with less than one room per household member and under-occupied households as those with more than one and a half rooms per household member.

As dependent variables related to *individual* dimensions, we consider the frequency of four emotional states (happiness, sadness, anger, anxiety) and two variables related to satisfaction with activities within the household (satisfaction with the division of housework) and outside the household (satisfaction with leisure activities). With respect to *social* dimensions, we examine the support networks that respondents may rely on, focusing on emotional support[4] from their partner, relatives, friends, neighbors, and colleagues. Moreover, we look at a variable related to general social engagement, focusing on the propensity to participate in federal polls. All variables are measured on a scale from 0 to 10. The exact survey questions and operationalizations of all independent and dependent variables can be found in Table A1, Appendix A.

Following existing research on the determinants of living space, in the models described below, we also include a number of control variables. These are standard sociodemographic factors such as gender, age (operationalized both linearly and as a quadratic term to capture nonlinear effects associated with the life course), education, nationality, region of residence, number of children in the household, and couple status, but also include the logarithm of the ratio of household income to household size. Further, we consider the type of residential area (urban or rural), the type of building, and the household member's status (tenants or homeowners). Finally, we also include time dummies to control for the presence of time trends and shocks affecting both our independent variable and the dependent variables of interest. Descriptive statistics for all variables that appear in the regression models presented in Subsection 4.2 can be found in Table A2 in Appendix A.

Average and dynamic effects: Model specification

To examine the average differences between individuals in overcrowded and under-occupied households and the rest of the population, and to establish whether these can be related to the living space available to them, we first focus on the following functional form:

$$D_{it} = \alpha + \beta\, I_{it} + C'_{it}\delta + \nu_i + \mu_{it},\ for\ i = 1, 2, \ldots, N\ and\ t = 1, 2, \ldots, T \tag{1}$$

where i and t are indices representing individuals and time periods, respectively; D is the dependent variable of interest; α is the intercept; I is the main binary independent variable of interest (coded as 1 for over–/under-occupied households, and 0[5] otherwise) along with its estimate β; C is a vector containing the control variables described above, along with their estimates δ; ν and μ are time-invariant (varying across individuals only) and time-varying (varying across both individuals and time) error terms, respectively.

Based on this functional form, we consider two models. First, we do not include any control variables (by setting C as the null vector) and apply the ordinary least squares estimator to the relationship between D and I, thus estimating the average difference in the dependent

variable between individuals living in overcrowded/under-occupied households and the rest of the population. The aim of using this model is to determine which type of individuals are more likely to belong to overcrowded or under-occupied households, regardless of whether overcrowding or under-occupation is the cause of these differences. To understand the extent to which these differences might be related to observable (measured by the main independent variable of interest and by the controls) and/or unobservable time-invariant characteristics (measured by the time-invariant error term ν), we apply the fixed effects estimator to (1) in a second model. While additional time-varying endogeneity issues may still confound the relationship of interest, the second model is the one that comes closest to identifying the causal effect of overcrowding/under-occupation on the dependent variables under study. When working with repeated observations of the same individuals, we potentially face problems of heteroskedasticity and serial correlation. We account for these issues by using cluster robust standard errors, with the individual serving as the cluster unit. For each survey participant, all analyses are restricted to the first transition to overcrowding/under-occupation that we observe when they participate in the survey. This means we do not have to make the rather strong and unlikely assumption that the exit transition (from overcrowding/under-occupation) has the exact opposite effect as the entry transition.

Since we assume that anticipatory processes precede the influence of living space conditions and that it may take several years for noticeable effects to emerge, we also consider the way in which overcrowding and under-occupation are dynamically linked to the outcome variables of interest in what is known as a "leads and lags" analysis. To this end, we divide the main independent variable I in specification (1) into several dummies, each identifying a particular moment in the trajectory before and after the transition to an overcrowded or under-occupied household:

$$D_{it} = \alpha + \beta_{-9}\, I_{it_{-9}} + \beta_{-8}\, I_{it_{-8}} + \cdots + \beta_{-1}\, I_{it_{-1}} + \beta_1\, I_{it_1} + \beta_2\, I_{it_2} + \cdots + \beta_9\, I_{it_9} + C'_{it}\gamma + \nu_i + \mu_{it},$$
$$for\ i = 1, 2, \ldots, N\ and\ t = 1, 2, \ldots, T \qquad (2)$$

Because of statistical power considerations, we group all observations that are longer than 9 years before or after the transition of interest. Therefore, $I_{it\text{-}9}$, $I_{it\text{-}8}$,..., $I_{it\text{-}1}$ are each coded as 1 if an individual is 9 years or more, between 7 and 8 years,..., up to 1 year before entering an overcrowded/under-occupied household, and 0 otherwise. β_{-9}, β_{-8},..., β_{-1} are the associated estimates. Ii_{t1}, Ii_{t2},..., Ii_{t9} are each coded as 1 if a person has been part of an overcrowded/under-occupied household for up to 1 year, between 1 and 2 years, . . . , 9 years or more. β_1, β_2,..., β_9 are the associated estimates. To reduce the high multicollinearity associated with this set of dummy variables, we merged pairs of consecutive years. We estimate specification (2) with fixed effects, using 9 years or more before the transition as reference. Descriptive statistics on the number of observations contributing to the leads and lags analysis of both overcrowding and under-occupation are available in Tables A3–A4, Appendix A.

Overcrowding and under-occupation in Switzerland: Empirical findings

Living space poverty and income poverty: Descriptive analysis

Before delving into the relationship between overcrowding and under-occupation and the outcome variables, we provide some descriptive statistics on these households. We use cross-sectional weights to obtain representative figures for the Swiss population. A cross-sectional analysis reveals that between 1999 and 2020, a total of 6% of households are overcrowded, while 48% are under-occupied. Moreover, the transition to overcrowding seems to result in a transitory situation for most people, while the transition to under-occupation results in a rather stable situation. This can be inferred from Tables A3–A4 (applying cross-sectional weights), which show the number of observations associated with the pre- and post-transition analysis. After the first 1–2 years, only 44% of respondents still live in overcrowded households in the

Table 1. Average and median age and age distribution (proportion) of people living in overcrowded and under-occupied households.

Indicator/living space situation	Overcrowded household	Under-occupied household
Average age	34	54
Median age	36	57
25 or under	0.28	0.08
26–35	0.22	0.12
36–45	0.32	0.11
46–55	0.14	0.17
56–65	0.03	0.22
66 or over	0.01	0.30

next two years. The corresponding figure for under-occupied households is 61%. Some of the decline is due to panel data attrition as some respondents are no longer participating in the survey, but these numbers underscore the fact that overcrowding is, in most cases, a less stable situation that most people are trying to escape, while under-occupation is a more permanent housing destination. Furthermore, we examine the distribution of transitions to overcrowding and under-occupation during the observation period (1999–2020) in Tables A5–6, Appendix A. The distribution is relatively homogeneous over time. The only sudden peaks that are visible occur in the one to two years following the introduction of a refreshment sample (2004 and 2013), that is, in 2005–2006 and 2014–2015. Throughout the period, we observe a slight upward trend, if any, in households transitioning to overcrowding and a slight downward trend in households transitioning to under-occupation.

To examine the profile of people in these two living situations in more detail, we look at their age profile (Table 1), the number of children in the household, and household size (Table 2). Overcrowding mainly affects young and middle-aged people (median age 36 and modal age group 36–45 years (32%)), while older people (median age 57, modal age group 66 years or over (30%)) are most likely to live in an under-occupied household. Overcrowded households are most likely to have two (35%) or three or more (34%) children, while the vast majority of under-occupied households (90%) are childless. This explains why overcrowded households consist of at least four (31%) or five (40%) members. While couples are the main category of under-occupied households (48%), people living alone also make up around a third (31%) of people in this situation. This shows that the two housing situations are clearly associated with different life course transitions, with overcrowding affecting middle-aged people who are just starting a family and under-occupation mainly affecting people of retirement age.

Looking at how both types of households subjectively perceive the size of their housing, 38% of overcrowded households perceive their housing to be too small, a figure that reaches only 3% among under-occupied households. Conversely, 15% of under-occupied households perceive their housing as too large, while only 1% of overcrowded households report the same. This shows that although most households report being satisfied with their living space, problems with dwellings being too small are much more common in overcrowded households than problems with a dwelling being too large in under-occupied households with too much space. As a result, overcrowded households are generally less satisfied with their housing than under-occupied households (7.5 vs. 8.5[6] on a scale of 0 to 10). Inadequate housing also correlates with a number of housing quality indicators. Compared to under-occupied households, overcrowded households are more likely to report problems with poor heating (11% vs. 7%), noise (24% vs. 22%), pollution (14% vs. 10%), or vandalism (11% vs. 10%).

Table 3[7] provides the average number of square meters available by household income decile. The table clearly shows that income poverty translates into living space poverty, with a difference of almost 60 square meters between the poorest and richest deciles.

Table 2. Distribution of number of children (proportion) and household size (proportion) in overcrowded and under-occupied households.

Indicator/living space situation	Overcrowded household	Under-occupied household
No children	0.14	0.90
One child	0.17	0.07
Two children	0.35	0.03
Three children or more	0.34	0.00
One member	0.00	0.31
Two members	0.03	0.48
Three members	0.06	0.15
Four members	0.31	0.05
Five members	0.40	0.01
Six members or more	0.20	0.00

Table 3. Average square meters (only 1999–2003) by household income decile.

Decile	1	2	3	4	5	6	7	8	9	10
Average	105	104	112	115	123	130	141	145	152	163

Toward overcrowding and under-occupation: Average and dynamic effects

Since we are only interested in one independent variable, we present the estimates for overcrowding and under-occupation in figures 2 and 3, respectively, and indicate the exact magnitude and significance of the estimates as we comment on them. Since all variables are measured on the same scale from 0 to 10, their magnitudes can be directly visually compared, while the significance levels are shown by the filling color of each symbol. The full regression results can be found in Tables B1–B4, Appendix B.[8]

Focusing on the average treatment effects of overcrowding in figure 2, we first find that individuals in overcrowded households are more likely to experience all types of emotional states (anxiety: 0.38***[9]; anger: 0.30***; joy: 0.1**; sadness: 0.09+), but none of these differences appear to be causally related to overcrowding, as they all become insignificant in fixed effects models. That said, these same individuals are also less satisfied with both their leisure activities (−0.45***) and the division of labor within their household (−0.27***). Since the fixed effects have a smaller magnitude but are still significant (satisfaction with leisure activities: −0.16*; satisfaction with division of household labor: −0.11+), part of these differences is directly related to the transition to overcrowding. While emotional support from the partner is not significantly different from what other households report, and emotional support from neighbors (0.10+) and relatives (0.081+) is only slightly higher than reported by other household types, individuals in overcrowded contexts can rely significantly more on friends (0.23***) and colleagues (0.26***). At the same time, they are significantly less likely to participate in federal polls (−0.50***). Controlling for both observable and time-invariant unobservable confounders in fixed effects models, the only estimate that remains significant in this second group of variables is increased emotional support from neighbors (0.22*).

Repeating this exercise for under-occupied households in figure 3, we find that attitudes tend to be the mirror opposite of those of individuals in overcrowded contexts. With the exception of sadness, they are significantly less likely than other households to experience various emotional states (anger: −0.30***; anxiety: −0.27***; joy: -0.12***). After controlling for observable and

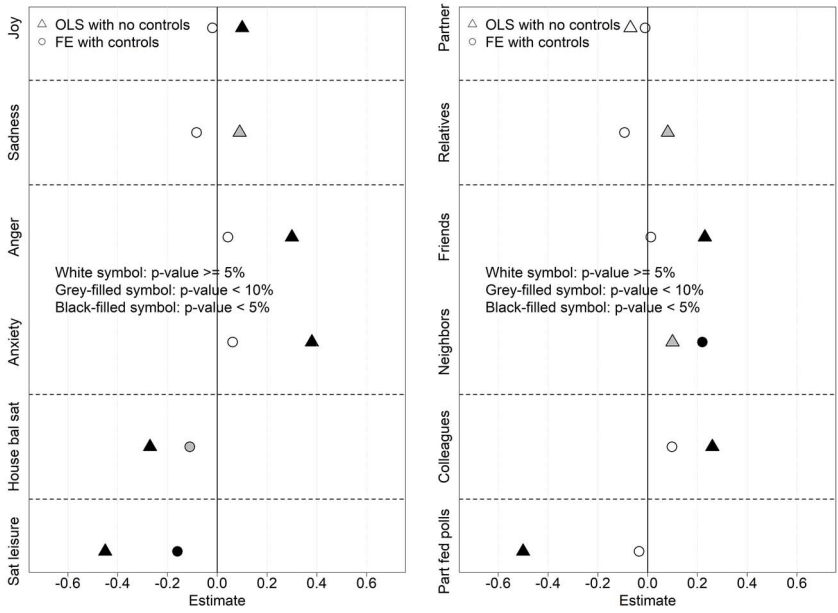

Figure 2. Average treatment effects of overcrowding.

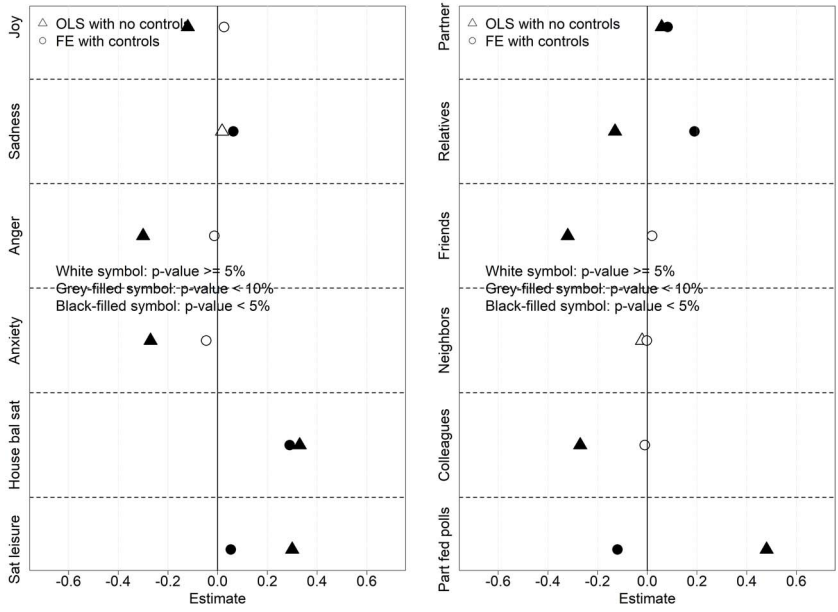

Figure 3. Average treatment effects of under-occupation.

unobservable sources of endogeneity in fixed effects models, we find that transitioning to under-occupation is associated with a small increase in the likelihood of experiencing sadness (0.063*). Individuals in this type of household are also more satisfied with their housework burden (0.33***) and leisure activities (0.30***). While for leisure activities only a small part of these differences

can be attributed to the transition to under-occupation (0.053*), the higher satisfaction with the division of labor seems to be almost exclusively related to the larger living space (0.29***). Relationally, these individuals report significantly lower levels of support from friends (−0.32***), colleagues (−0.27***), and relatives (−0.13***), offset only by slightly higher levels of support from their partner (0.058*). However, they are significantly more involved in politics than others (0.48***). When focusing on fixed effects models, the only significant effects are increased support from relatives (0.19***) and partner (0.082**), but also a reduced propensity to take part in federal polls (−0.12**).

While the average treatment effects give us a sense of the average attitudinal changes associated with transitions to overcrowding and under-occupation, we now focus on how these transitions are dynamically related to the outcome variables being considered. Since we are only interested in the estimates of the dummy variables that identify the trajectories associated with overcrowding and under-occupation, we have presented these in figures 4–7. The full regression results can be found in Tables B5–B6, Appendix B. From the figures, we identify the clearest trends and perform explicit significance tests with respect to the initial and final points. Because the multicollinearity between successive dummies makes this an analysis that requires high statistical power, and because we want to be able to compare estimates for two transitions that involve very different sample sizes (overcrowding: 6% vs. under-occupation: 48%), when commenting on the overcrowding results, we consider three estimates to be meaningful even though they exceed the 10% significance threshold. It also needs to be borne in mind that we employ robust standard errors, which provide rather conservative test statistics. While these estimates should be interpreted with caution, we show in the discussion that their inclusion is consistent with the general empirical pattern we derive by focusing on the large majority of statistically significant estimates.

Beginning with figure 4 and an initial set of dynamic effects of overcrowding, we find a fluctuating trajectory for joy, but the only significant trend is a decrease after the transition of interest (−2/−1—> 3/4: −0.24*). Sadness (−6/−5—> 9 or more: 1.08*) and anger (−6/−5 —> 3/4: 0.55+) increase throughout the trajectory, while anxiety (−6/−5—> 1/2: 0.26, $P = 0.23$) peaks immediately after the transition but at low significance. Satisfaction with the division of housework decreases several years before transition and persists until several years after transition (−4/−3—> 3/4: −0.33*). Satisfaction with leisure time activities seems to decrease until immediately after the transition to overcrowding, albeit with low significance (−8/−7—> 1/2: −0.34, $P = 0.12$). For those living longer in an overcrowded household, it then increases for several years (1/2—> 9 or more: 0.48*).

For another set of dependent variables related to overcrowding (figure 5), we observe a jump in emotional support from the partner only between the time immediately before and immediately after household overcrowding (−2/−1—> 1/2: 0.14+). Support from relatives tends to decrease years before the transition and continues to do so after household overcrowding, but reaches low statistical significance only during the transition (−2/−1—> 1/2: −0.15, $P = 0.19$). Emotional support from friends increases significantly after the transition (1/2—> 7/8: 0.43*). Similarly, support from neighbors increases significantly, especially right before and right after the transition (−2/−1—> 1/2: 0.32, $P = 0.05$), a trend that continues after the transition, but in a fluctuating form due to multicollinearity issues. Support from colleagues also increases over time, especially immediately before the transition, and continues steadily thereafter (−2/−1—> 9 or more: 1.01**). Participation in federal polls shows no significant trend.

Switching our attention to under-occupation in figure 6, joy shows no significant dynamic trend. Sadness increases a few years before the transition and then levels out immediately after it (−4/−3—> 1/2: 0.21***). The probability of feeling anger decreases slowly and steadily, but is never close to being significant. Anxiety decreases more markedly, a decline that becomes more important and reaches statistical significance after the transition (1/2—> 7/8: −0.14+). Satisfaction with the division of housework increases immediately before the transition and

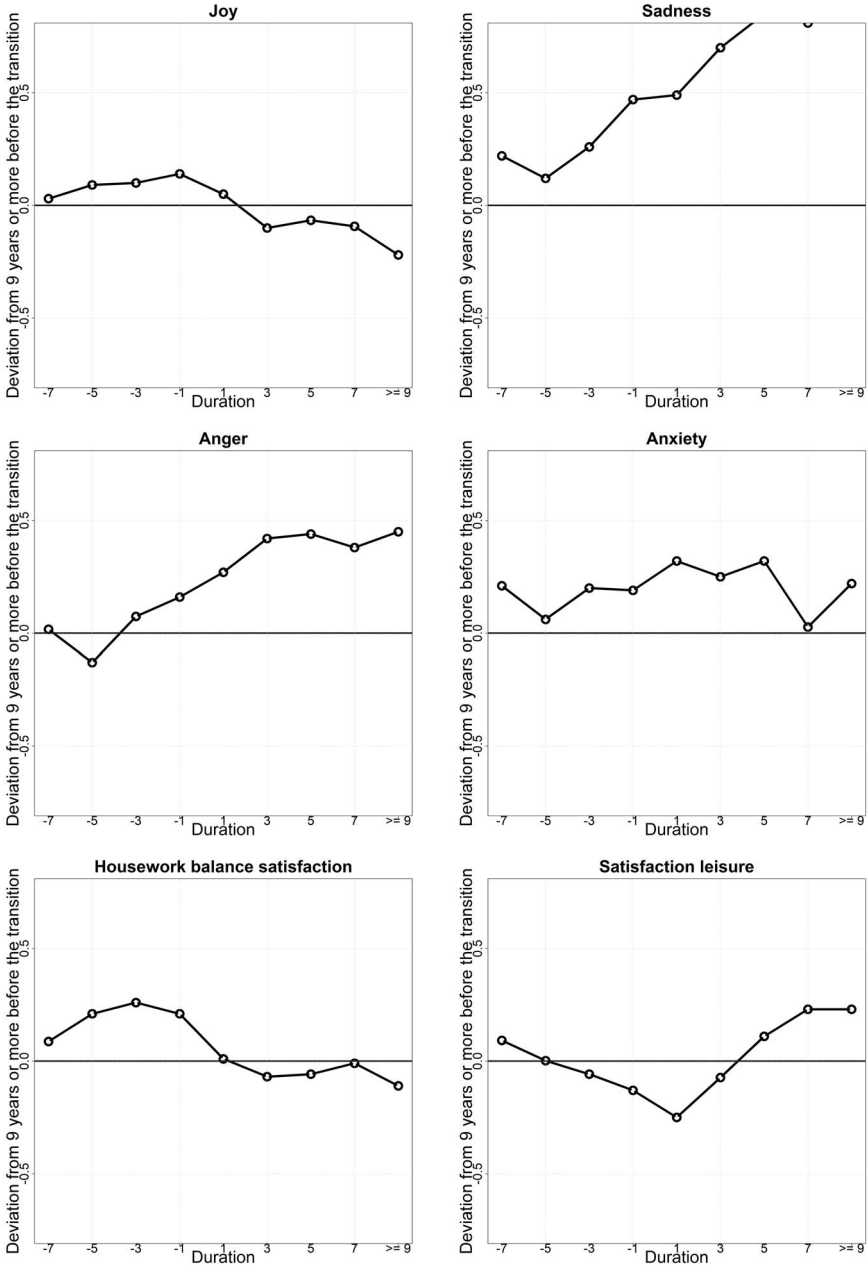

Figure 4. Dynamic effects of overcrowding on emotional and activity variables.

persists thereafter (−2/−1—> 9 or more: 0.52***). Satisfaction with leisure time activities shows no significant trend.

Looking at another set of variables related to under-occupation (figure 7), we find that emotional support from the partner mainly increases immediately before and after transition (−2/−1—> 3/4: 0.14*) and then continues at slower pace after that (−2/−1—> 9 or more: 0.21+),

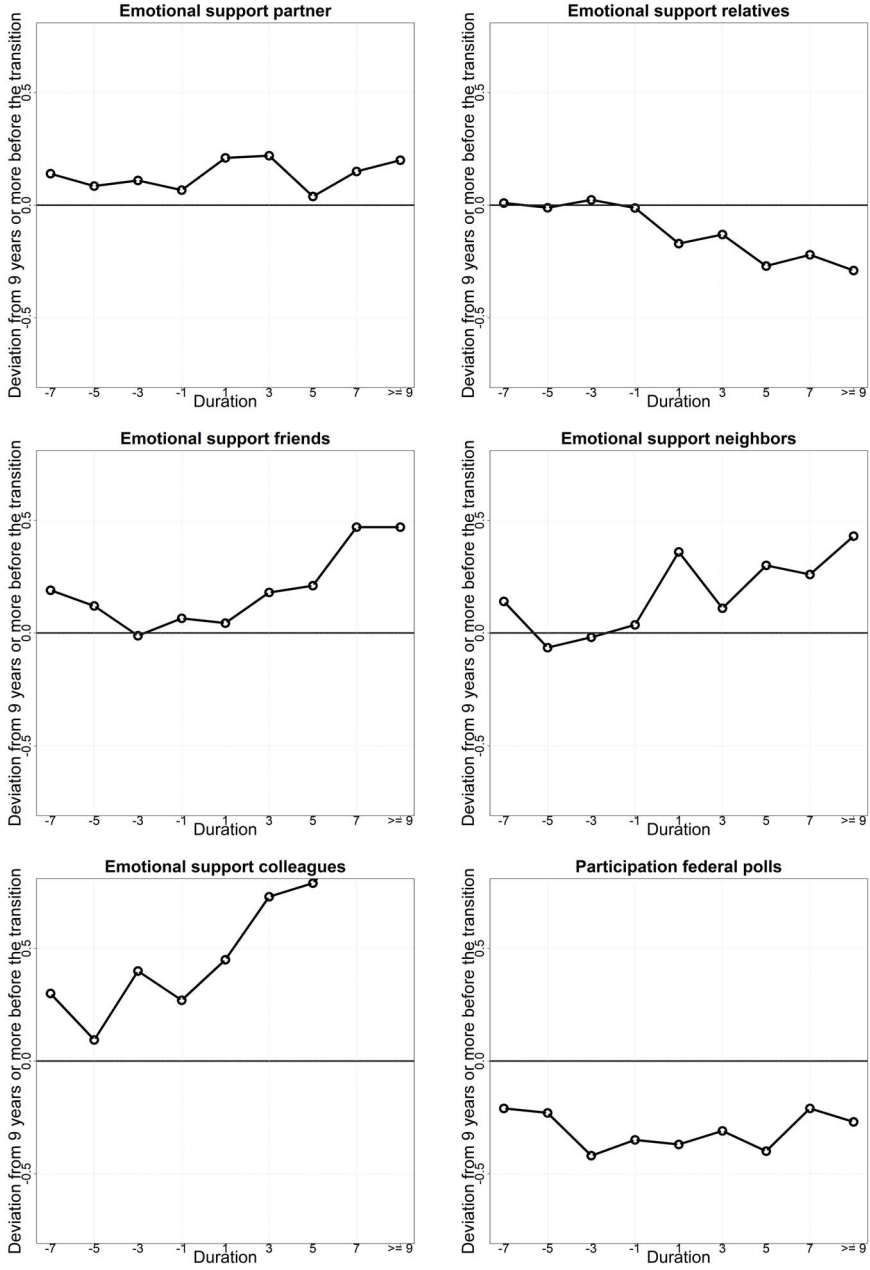

Figure 5. Dynamic effects of overcrowding on relational and political variables.

while emotional support from relatives increases continuously before and after household underoccupation (−9 or more—> 9 or more: 0.62*). Emotional support from friends decreases after the transition (1/2—> 7/8: −0.15*). While support from neighbors and colleagues shows no clear dynamic effects, the propensity to vote in federal polls decreases, starting a few years before the transition (−4/−3—> 7/8: −0.29*).

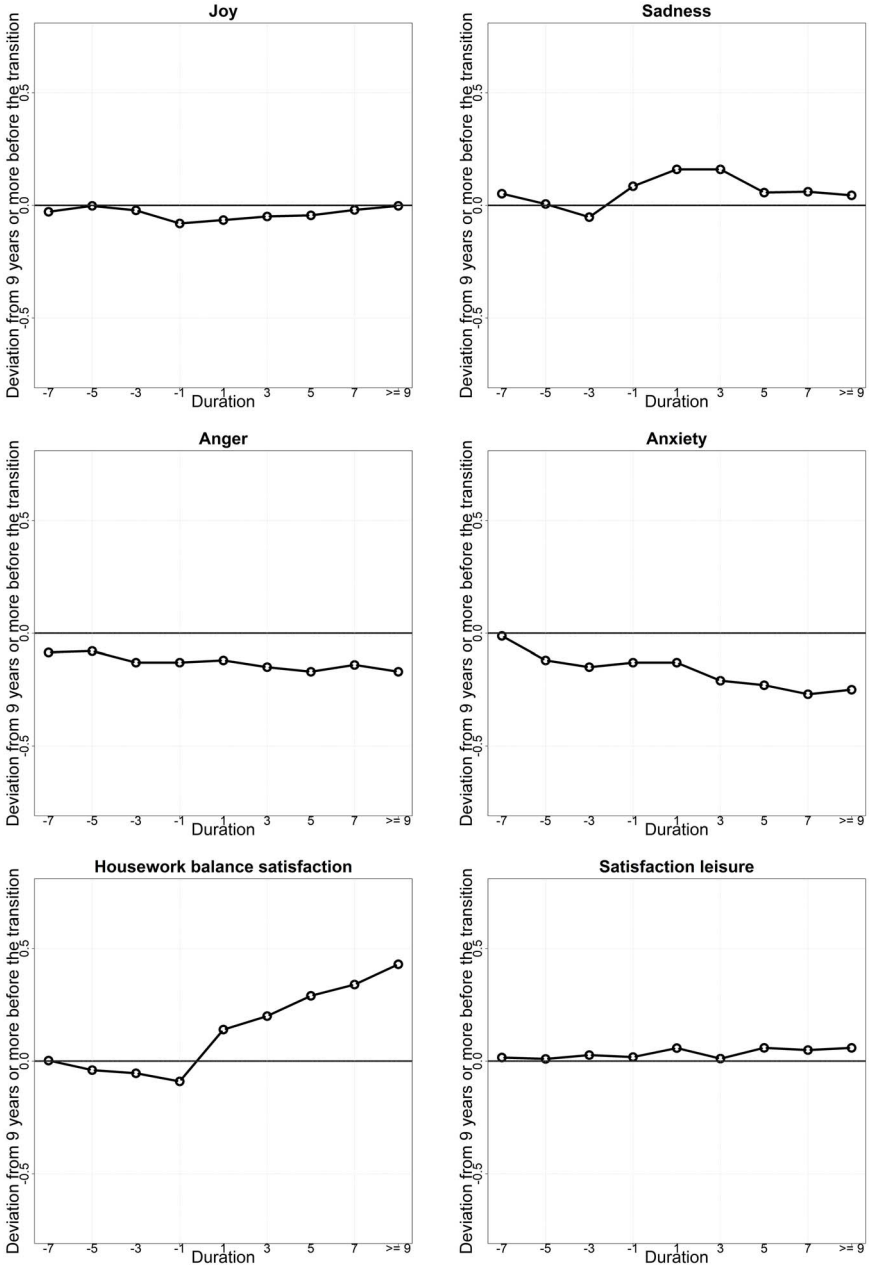

Figure 6. Dynamic effects of under-occupation on emotional and activity variables.

Reaching out vs. reaching in: Discussion

Looking at the profile of people living in overcrowded and under-occupied households through the lens of our dependent variables, the empirical patterns we find can be aligned with the life transitions with which these two events are associated. People living in overcrowded households are more likely to experience all kinds of emotional states, to be less satisfied with their

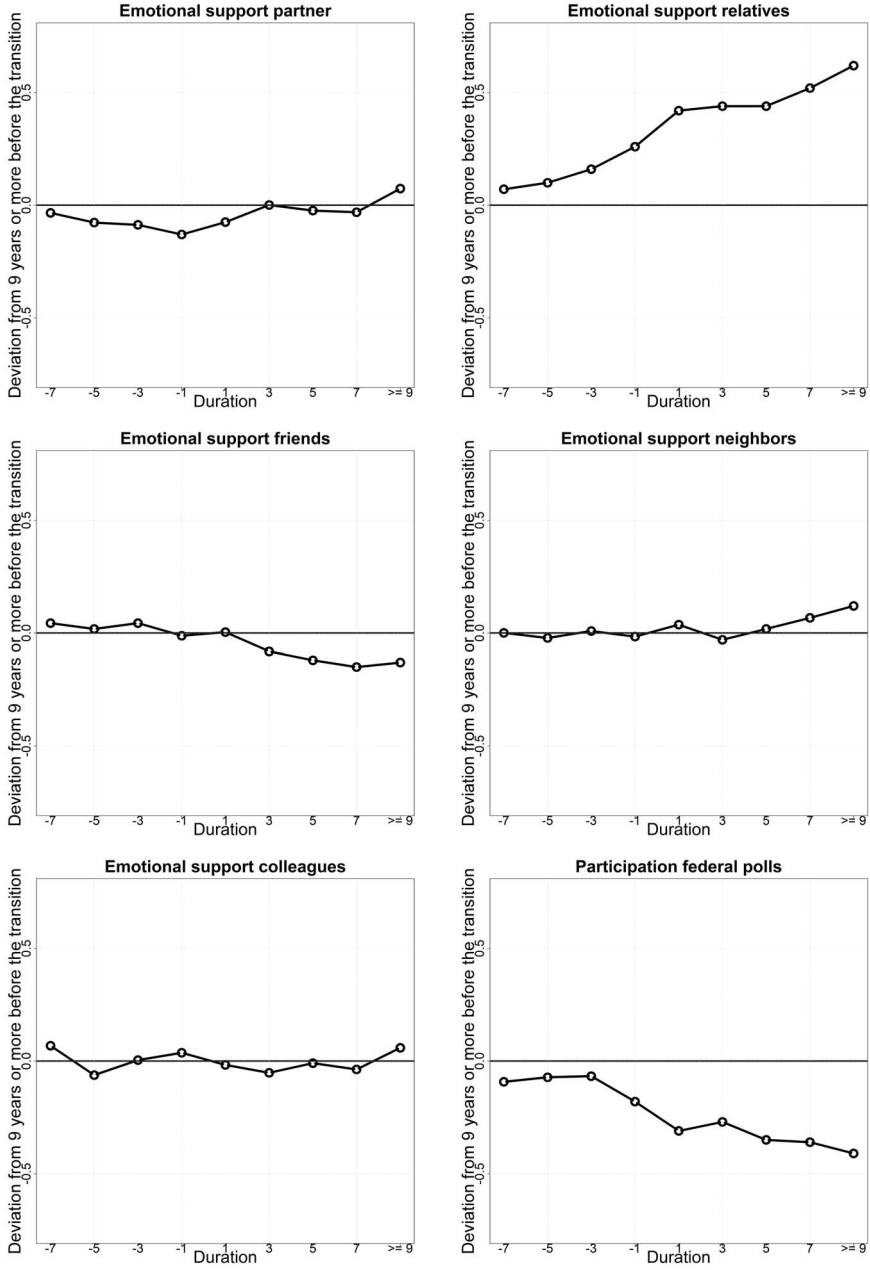

Figure 7. Dynamic effects of under-occupation on relational and political variables.

activities inside and outside the household, and to rely mainly on the support of friends and colleagues, while being uninterested in broader social dynamics such as politics. This Simmelian nervousness (1995[1903]) can be attributed to the phase of early adulthood, family obligations, and material hardship that accompany overcrowding, as described in previous research (e.g., Foye 2016). However, after controlling for these concurrent events and all time-invariant unobserved

heterogeneity, we show that these differences with other households are only partially causally related to overcrowding. While emotions are not significantly affected, some of the lower satisfaction with the division of household labor and leisure activities is actually the result of the challenges associated with transitioning to crowded conditions, as is an increase in support from neighbors. This goes beyond the existing research which has looked at the emotional consequences of crowding in cross-sectional or panel studies, neglecting the time dimension (e.g., Pengcheng et al. 2021).

In contrast, people in under-occupied households exhibit much higher emotional stability, are more satisfied with their activities both within and outside the home, are significantly more interested in politics than the average person, and receive somewhat more emotional support from their partner, while receiving less support from friends, colleagues, and relatives. Again, these differences can be linked to the profile of people in under-occupied housing, who are generally older and wealthier than average (e.g., Wagner and Mulder 2000). After controlling for these and other observable characteristics, as well as unobservable time-invariant omitted variables, few of these differences turn out to be causal. On average, the change to under-occupation contributes to a small increase in sadness. While higher satisfaction with leisure activities is only partly related to the transition, the advantage these households enjoy in terms of satisfaction with the division of housework is entirely due to the new living conditions. We interpret this as a sign that comfortable living conditions and the absence of material hardship make it easier for both partners to meet each other's expectations (Conger, Rueter, and Elder 1999). This is consistent with an increase in perceived emotional support from the partner, which is also associated with an increase in the role of relatives. At the same time, however, the move to more spacious living conditions sees individuals reduce their baseline advantage in terms of interest in politics.

While the picture painted in the previous two paragraphs refers to the average (causal) effects of overcrowding and under-occupation, these are mainly influenced by observations regarding households studied for just a few years in the two types of living condition of interest. As we highlighted in Subsection 4.1, for most households, overcrowding is only a temporary situation that is left behind after a few years. Moreover, panel data attrition limits our ability to observe the impact of longer periods of these conditions for many households. For these empirical reasons, but also because our theoretical framework leads us to believe that the personal and social adjustments associated with the two transitions of interest are likely to be a continuous process requiring time, rather than instantaneous events, we examined the dynamic effects associated with them, again controlling for observable and time-invariant unobservable confounders. The empirical findings reveal that there are indeed a larger number of relevant dynamic effects associated with the two transitions. In particular, the likelihood of feeling joy decreases significantly during the transition to overcrowding, with sadness and anger increasing throughout the trajectory before and after becoming part of an overcrowded household. This means we can confirm the overall conclusion of previous research regarding the negative personal consequences of overcrowding (e.g., Altindag, Erten, and Keskin 2022), but only if we take a long-term perspective. Satisfaction with the division of housework decreases in the transition phase in particular. This is the counterpart of what we highlighted above for under-occupation: When physical and material hardships arise, as they do in the transition to overcrowding, it becomes difficult to prioritize an equitable division of labor among partners over other issues. This has been demonstrated, for example, when examining the impact of recent COVID shutdowns on gender balance in division of household labor (Cera and Klinenberg 2024). Leisure activities become less rewarding in the phase before overcrowding and reach their lowest point immediately after the transition (with a significance level slightly above 10%, this decrease should be interpreted with caution). That said, people still living in overcrowded households are able to reorganize their leisure time outside the household in a way that is even more satisfying than before the transition. This shows that while the internal constraint of physical density leads to problems that are difficult to solve completely (even if such problems do not increase after the transition), individuals are even more motivated to find a new,

more satisfactory balance outside the household. This is also reflected in the reconfiguration of social networks, with support from friends, neighbors, and especially colleagues increasing throughout the trajectory, while the role of relatives tends to decrease (albeit at a significance level that should be interpreted with caution). This reorientation from strong to weak ties can be explained by the characteristics of the latter, which are more easily compartmentalized and separated from the constrained household interactions in a dense living space (Small 2010). They also require much less time and emotional energy and compensate for suffocating household ties (Finkel et al. 2014), especially for young people (Wright and Miller 2010). At the same time, support from the partner increases sharply during the transition, while political engagement remains unaffected.

With regard to under-occupation, joy and anger remain unaffected even when viewed dynamically, while sadness increases during the transition and then levels out, and anxiety decreases throughout the trajectory, especially after the transition. Satisfaction with the division of household labor increases immediately before the transition and persists after it. This indicates the presence of objective elements in the new living conditions, in particular higher material well-being, which facilitate coordination between partners even without anticipatory adjustments. While satisfaction with leisure activities and support from neighbors and colleagues remain unaffected, support from friends decreases after the transition, whereas support from relatives increases sharply throughout the trajectory. At the same time, we see a decrease in the higher level of interest in politics observed among these individuals.

Hence, there is a striking, though not completely perfect, asymmetry in the findings regarding overcrowding and under-occupation, which prior literature has tended to treat as different phenomena and in isolation (He et al. 2020). Though our binary definition of states of crowding prevents us from specifying a clear continuous relationship with outcomes, the asymmetric findings suggest at least a basic linearity of the extremes in living space provision. It is possible to posit the existence of a "sweet spot" characterized by perfect physical density that does not entail negative emotional consequences and leads to a balance between strong and weak ties.

Interestingly, the only equivalent pattern we found for both overcrowding and under-occupation (in terms of both timing and magnitude of effect) is the increase in emotional support from the partner during the two transitions. This underscores the interpretation of these two transitions as challenging events that initially require support from the closest social bond, namely that with the partner (Conger, Rueter, and Elder 1999). However, this coalescence around the partner appears only during the disruptive events and is then complemented by various support networks that aim to compensate for the opposing challenges posed by over- and under-occupation.

Taken together, these dynamic results tell us that household physical density that is too high leads to negative outcomes at the personal level and in terms of internal household dynamics, while physical density that is too low leads to melancholic stabilization of emotions and improved perceptions of the division of household labor. However, this intra-household personal anomie does not translate into external anomie. On the contrary, both overcrowded and under-occupied households are able to respond to changes in internal physical density by generating counterforces in their social networks. Overcrowded households are able to reduce the spatial confinement they face in the household by shifting their support networks from the strong ties of relatives to the weaker ties of friends, neighbors, and colleagues. Under-occupied households, on the other hand, compensate for the excessive physical space they experience by reconnecting with their relatives at the expense of their friends. At the same time, they also reduce their interest in the political sphere. The mere presence or absence of sufficient space does not automatically lead to undersocialization or oversocialization, but rather to different types of social relationships that focus to a greater or lesser extent on either domestic or non-domestic activities. The "family" to which an individual belongs cannot be confined to their own four walls, but requires the adoption of a configurational perspective (Widmer and Jallinoja 2008) in which multiple bonding and bridging ties interact in complementary ways (Widmer 2006).

The household and the family cannot be separated from broader social networks and the public sphere.

While the intra-household pattern of outcomes for overcrowding is worrying, the external equilibrium these individuals find outside the household counters the risk of an extreme anomic pattern with the development of "amoral familism" (Banfield 1967). The problems of physical density experienced by these households, in most cases associated with the lower social strata, are a clear trigger for the development of weaker ties that are likely to form bridges to other parts of society (Hipp and Perrin 2006). Thus, the challenging event of overcrowding has both a negative (personal) and a positive (social) side. Paradoxically, the comfortable emotional stabilization of under-occupation is more problematic for the integration of different social strata in a society, as it leads to a clear trade-off between strong and weak ties, privileging the former over the latter.

Heterogeneous gradual adjustments? Concluding remarks

The explosion of urban housing costs has led to declining living space and a return of overcrowding in major European cities. What are the personal and social consequences of different household densities? With one of the lowest overcrowding and highest under-occupation rates in Europe, Switzerland is a hard case for which to find any effects. Nevertheless, we broadly identified long-run negative individual and positive non-domestic social effects of overcrowding, mostly reversed for situations of under-occupation.

Methodologically, we have shown that it is useful to distinguish between selection, short-term, and long-term causal effects of overcrowding and under-occupation. While the two transitions are clearly associated with certain observable life events, they are also associated with unobservable personality traits that can only be controlled for when panel data are used. Moreover, neither transition is an immediate event, but rather should be understood as a continuous process whose influence is realized over the long term and includes both anticipation and maturation effects.

On a substantive level, we have shown that anomie in the context of living space cannot be conceptualized as a one-dimensional phenomenon, but requires at least a distinction between personal/internal and social/external dimensions. Individuals are able to cope with disruptive events associated with housing scarcity or surplus that create pressure in the personal/internal sphere by adjusting their social/external lives in ways that allow them to find new equilibria to compensate for the negative personal/internal consequences of the disruptive event. The basic need of individuals to belong seems to be quite malleable to different combinations of strong and weak ties. Our paper shows that achieving the right balance is influenced not only by general social trends but also by the living density of the household. In a Durkheimian sense, individuals may develop new external ties in the face of overly strong or weak integration within the household, creating a new organic equilibrium that compensates for the excesses that arise within the household. Whereas Durkheim (1984[1893]) and Merton (1938) saw anomie as resulting from a mismatch between personal means and macro-level social norms, in this case we show that the micro-level personal sphere and the meso-level sphere of social networks are interconnected in such a way that one sphere can compensate for the disruptions in the other. Again in a Durkheimian sense, both transitions studied can be seen as the realization of rapid social change—both normative and economic—at the micro level. Individuals are gradually able to cope with these changes, avoiding social alienation by adjusting their support networks accordingly.

For the sake of simplicity, we examined the transitions to overcrowding and under-occupation as dichotomous states. However, our analyses suggest the possible existence of a linear relationship between living space and the outcome variables considered, which could be explored in future studies. We considered the average impact for all Swiss households that experienced the two transitions, but it would of course be interesting to examine how heterogeneous these impacts are, particularly by age group, household size, gender, and social class. With respect to age, the two transitions are also associated with different life course events, with overcrowding

mainly affecting middle-aged families and under-occupation mainly associated with older people without children. In future research, it would be interesting to examine in more detail the heterogeneous ways in which different age groups cope with living space challenges. In particular, the dichotomy between overcrowding and under-occupation may be a neglected dimension of intergenerational conflict (Szydlik 2008) that should be explored further. While overcrowding appears to almost exclusively concern families with many children, under-occupation shows a bimodal distribution between couples (48%) and solo dwellers (31%) that is likely to be associated with heterogeneous effects. Indeed, experiencing under-occupation while living as a couple appears to imply quite different individual and social consequences (Klinenberg 2012). While, as indicated above, the two transitions are clearly associated with certain social classes, the effects of material and social restructuring described above are likely to be different for women and men, as well as for the young and the elderly. For the US case, examining heterogeneity by race would also be highly relevant (DeFina and Hannon 2009).

Finally, while Switzerland's extreme characteristics make it an appropriate case to derive empirical patterns that are likely to be more pronounced in other advanced countries, for the same reason the external validity of our study is limited to WEIRD (Western, educated, industrialized, rich, democratic) countries (Henrich, Heine, and Norenzayan 2010).

Supplementary Material

Supplementary Material is available at *Social Forces* online.

Endnotes

1. The Boolean search reads: (TS = "overcrowding" OR TS = "crowding" OR TI = "overcrowding" OR TI = "crowding" OR AB = "overcrowding" OR AB = "crowding") AND (TI = "housing" OR TS = "housing" OR AB = "housing") NOT (TS = "crowding-out" OR TS = "crowd out") NOT (AB = "crowding-out" OR AB = "crowd out")
2. We did not consider the average number of square meters per person, as this information is only available in our data up to 2003. However, after experimenting with alternative operationalizations based on the distribution of square meters per person, we obtain similar results to those described below.
3. Because we do not have sufficiently precise information on all the sociodemographic characteristics of the children in each household (especially age and sex), we give each household member the same unitary weight, regardless of age. However, when we repeat the same analyses presented below and count each child (defined in the SHP data as persons 14 years of age or younger) as half a household member, this does not change our main results. We also include the number of children in the household as a control variable.
4. While the SHP offers several operationalizations of the support provided by the different categories of people we consider (frequency of contact, number of people someone is in contact with, practical support), our focus is on emotional support, as this is the most distinctive dimension among all those available (Marsden and Campbell 1984). Nevertheless, it is useful to emphasize that we obtain similar results to those described below, albeit with less marked differences between the different types of ties, even when we use the other three potential measures of strength of ties available.
5. For both overcrowding and under-occupation, our control group refers to the "rest of the population" and thus includes both households in "normal" housing conditions (with one to one and a half rooms per member (44%)) and households in the opposite housing situation (under-occupied households when overcrowding is the treatment variable and overcrowded households when under-occupation is the treatment variable). Although our theoretical framework does not involve any expectations of heterogeneous effects depending on the control group, we show in Appendix C that the overall pattern of results does not change

when we restrict the control group to either households in "normal" housing conditions or households in the opposite housing situation. Our focus on the "rest of the population" as a control group is preferable because it represents a more general and larger control group that increases both the external validity and the statistical power of our analyses.

6. Given the high statistical power of the data for cross-sectional tests of this type, all significance tests we performed for these differences are clearly significant ($p < 0.1\%$).
7. The figures refer only to the period 1999–2003, as information on square meters is no longer available in the survey after 2003.
8. While in the models we focus on in the main text we use all years for which data are available for the variables we include in each model, the four emotional states dependent variables are only available from 2006 onwards, while all other dependent variables are available from 1999 onwards. While we already control for time dummies, which remove the influence of trends in specific years, in Appendix D we provide a robustness check with all our models restricted to the period from 2006 onwards. The results are remarkably similar to those we comment on in the main text, but they have less statistical power as they are based on fewer observations.
9. Significance levels: + $P < 0.10$. * $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$.

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Funding

None declared.

Conflicts of interest

None declared.

Data availability statement

The data that support the findings of this study are based on the Swiss Household Panel (SHP). Researchers can have access to the data after signing an individual user contract with the Swiss Centre of Expertise in the Social Sciences: https://forscenter.ch/projects/swiss-household-panel/.

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https://doi.org/10.1093/sf/soae163
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