Hidden Homelessness in Germany: Gathering Evidence on Couch Surfing in Telephone Surveys

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Abstract_ *The article provides survey evidence on hidden homelessness in Germany. I use an indirect approach to survey those who live with friends, family or other people as so-called sofa surfers or couch surfers. The data come from three multi-topic, randomly sampled telephone surveys, which were carried out in 2019 and early 2020. The survey respondents reported whether they had hosted homeless friends, family or other persons. The results show that within a period of 12 months, about 3 per cent accommodated a person for at least one night. The results are consistent over three independent samples and the socio-demographic profile of the hidden homeless people fits well with results of previous research on other countries or using other approaches. I discuss potential caveats of telephone surveys with regard to potential bias in estimates of the prevalence of couch surfing and options how to assess and minimise bias. An alternative to telephone surveys would be to include questions on couch surfing and other forms of hidden homelessness in thematic modules on housing in recurrent household surveys. The present study shows the basic feasibility of collecting data on hidden homelessness from respondents in population surveys.*

Keywords_ *hidden homelessness, couch surfing, Germany, telephone survey, population sample*

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Introduction

For a long time, national social reporting in Germany largely ignored homelessness. Periodic reporting on poverty and wealth exists since the late 1990s but despite a promising feasibility study, attempts to incorporate national statistics on homelessness did not succeed (Bundestag, 2015). The extent of homelessness increased markedly over the last decade and this stirred new initiatives on national statistics on homelessness. In March 2020, the German parliament passed legislation on the establishment of a statistic on homelessness using institutional data (Bundestag, 2020). Furthermore, in the framework of the upcoming national report on poverty and wealth, a larger study on homelessness was commissioned (Busch-Geertsema *et al.,* 2019; Busch-Geertsema *et al.,* 2020). While this study compiles broad evidence on homelessness, it also stresses the lack of data on other groups "for example, sleeping rough, bivouacking or finding temporary shelter with relatives and friends because they do not have their own apartment." (Busch-Geertsema *et al.,* 2019, p.204, author's translation). In this paper, I focus on the third group, people who stay with relatives or friends. In the widely applied ETHOS light typology, this group is described as "Homeless people living temporarily in conventional housing with family and friends (due to lack of housing) – Category 6" (Edgar *et al*., 2007; Busch-Geertsema, 2010). More colloquially, terms like sofa- or couch surfers are used as labels for this group.[1] The literature refers to couch surfers – together with other groups such as "People living in non-conventional dwellings due to lack of housing" (ETHOS light Category 5) – often as "hidden homeless" (e.g., Robinson and Coward, 2003; Eberle *et al.*, 2009; Busch-Geertsema *el al.*, 2010; London Assembly, 2017; Pleace, 2017; Demaerschalk *et al.*, 2018).

Based on random samples, the study provides survey evidence on couch surfing in Germany. I use an indirect approach to survey those who live with friends or relatives. The data come from three multi-topic, telephone surveys that were carried out in 2019 and early 2020. The first is a nation-wide survey. The two other surveys cover the population in Hamburg, the second-largest city of Germany. Hamburg is a suited case for this study for two reasons: On the one hand, in larger cities homelessness in general is more of an issue. Thus, in a smaller population sample from Hamburg it can be expected to survey a relevant number of cases. On the other hand, Hamburg commissioned studies on rough sleepers and people who live in public accommodation about every ten years since 1996. The latest study was carried out in March 2018 (GOE, 2019) and provides a good reference point to

[1] The use of the term sofa surfers is most common in the UK and Ireland (e.g., Robinson and Coward, 2003; London Assembly, 2017), while couch surfers is used more often in the US, Canada and other countries (e.g., Curry *et al.,* 2017; Kauppi *et al*., 2017; Demaerschalk *et al*., 2018). I also use the latter term.

compare the characteristics of couch surfers against those of other groups of homeless people. Each of the three surveys contains about 1 000 respondents, in total 3 380. The survey respondents answered whether they had hosted homeless friends, family or other persons over the last 12 months. Proxy information is used to describe the socio-demographics of the couch surfers. The approach of the study is similar to Eberle *et al.*'s (2009) survey on hidden homelessness in Vancouver, Canada. But the data provides more information on the respondents and the couch surfers. Furthermore, the study also provides results at the national level. As previous studies show, hidden homelessness is not primarily an urban phenomenon and should be surveyed not only in larger cities (Robinson and Coward, 2003; Kauppi *et al*., 2017; Snelling, 2017; Demaerschalk *et al*., 2018). The main aim of the study is to provide insights into the feasibility of the approach, but I report also substantial results as far it is possible on the basis of three smaller surveys.

The article is organised as follows: After a short discussion of previous research on hidden homelessness, I provide an overview on data collection and methods. Then, I present results on the prevalence of couch surfing in the data and discuss the potential for inferences on a population level. I compare the study's results with results of studies on other groups of and address the question how the characteristics (e.g., age, gender) of the couch surfers differ from others. Finally, I discuss the feasibility of the approach and potential caveats. Finally, I provide a brief conclusion and perspectives for further research.

Couch Surfing and Hidden Homelessness

Hidden homelessness and couch surfing are not clearly defined terms but are often used to describe people who stay with relatives or friends because they do not have a dwelling of their own. There has been some debate whether to regard this group as homeless or as a group in insecure living conditions. The original ETHOS typology (Edgar *et al.,* 2007, p.59) classifies living "temporarily with family/friends" as a form of insecure housing and more generally as housing exclusion but not as homelessness. This view has been challenged (Amore *et al.,* 2011) and it has been argued that the lack of an own dwelling and the lack of privacy resulting from involuntarily living together with others justifies the categorisation as homelessness (Sahlin, 2012). This view is also implemented in the so-called 'ETHOS light' typology (Busch-Geertsema, 2010), where people living with family and friends are included into the category of homeless (Edgar *et al.,* 2007, p.66). Still, as people live in conventional housing and are often not using services for the homeless it is difficult to distinguish between homeless couch surfers and people who just live for a while with friends or family. Later I will discuss how this somewhat blurry line complicates surveying the prevalence of hidden homelessness.

There is a smaller literature providing evidence on hidden homelessness. Most of the studies fall into one of the following three categories: 1) studies on teenagers and young adults, a group with a high prevalence of couch surfing (McLoughlin, 2013; Clarke, 2016; Curry *et al.,* 2017), 2) studies on homelessness in general, which also provide evidence on hidden homelessness (Toro *et al.,* 2007; Kauppi *et al.,* 2017; Crisis, 2019a; Crisis, 2019b; NRW, 2019; ARA, 2020), and 3) studies with a focus on hidden homelessness (Robinson and Coward, 2003; Eberle *et al.*, 2009; Rodrigue, 2016; London Assembly, 2017; Demaerschalk *et al.*, 2018). The methodological approaches of these studies differ significantly.

Besides explorative or descriptive qualitative or mixed-method studies (McLoughlin, 2013; Kauppi *et al.*, 2017; Demaerschalk *et al.*, 2018), there are a number of studies which provide quantitative estimates of the prevalence of hidden homelessness. Different methods are applied to gather quantitative evidence. A first group of studies includes questions on hidden homelessness in multi-themed telephone interviews with random samples of youths (Curry *et al.*, 2017; London Assembly, 2017) or of the general population (Eberle *et al.*, 2009). These studies ask if respondents are couch surfing or are hosting couch surfers (currently and/or within the last 12 months or similar). A second group of studies includes questions on homelessness (including couch surfing and other forms of hidden homelessness) into larger social science survey programmes. The questions are usually directed at past experiences of homelessness, in a lifetime perspective and/or over a period of two or more years prior to the survey (Rodrigue, 2016; Kauppi *et al.*, 2017; Crisis, 2019a; Crisis, 2019b).[2] Third, there are a few studies using other approaches. Toro *et al.* (2007) conducted telephone surveys on attitudes, opinions and knowledge regarding homelessness. Furthermore, they asked about lifetime experiences of homelessness. In Finland, information on persons temporarily living with friends or family is gathered in assessments or from municipal data (ARA, 2020). In Germany, the federal state of North Rhine-Westphalia (NRW, 2019) gathers information on hidden homeless by surveying non-governmental service providers in the framework of social reporting on homelessness. In Britain, micro- and macro-data from various surveys are used in simulation models to provide evidence on the prevalence of and trends in homelessness including couch surfing (Bramley, 2016; London Assembly, 2017; Crisis, 2019a; Crisis, 2019b).

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2 In particular, the UK has a tradition of surveying past experiences of homelessness in recurrent population studies. These are surveys such as the Scottish Household Survey (SHS) and the British Cohort Study or the Poverty and Social Exclusion Survey. Bramley and Fitzpatrick (2018) use all of these surveys in their article on the social distribution of homelessness in the UK but do not address explicitly the issue of hidden homelessness.

Prevalence of couch surfing and other forms of hidden homelessness differs across studies and countries. Toro *et al.* (2007, p.512) distinguish between lifetime prevalence of "literal homelessness" and "overall homelessness" which includes forms of "precarious housing (e.g., doubled-up with family or friends)". They provide evidence for the US, Belgium, UK, Germany and Italy. The prevalence of overall homelessness ranges from 5.6 per cent in Germany and 12.9 per cent in the US. In all countries except the UK, the percentage "overall homelessness" is more than double as high as "literal homelessness". This indicates that "precarious housing", a form of hidden homelessness is more prevalent than other forms of homelessness. Recent studies come to similar results. Rodrigue (2016) reports that eight per cent of the Canadian population experienced hidden homelessness in their lifetime. Kauppi *et al.* (2017), using the same data source, additionally report that two per cent of Canadians experienced forms of homelessness like rough sleeping. Crisis (2019a, p.79) provides projections for Scotland based on recurrent surveys and other data that show that the number of couch surfers is at least five times as large as the number of rough sleepers. Similar results are reported for England (Fitzpatrick *et al.*, 2019b, p.62) and Finland (ARA, 2020, p.4). Taking a different angle, Ebert *et al.* (2009, p.19) find that in Metro Vancouver/Canada at the time of the interview, 0.8 per cent of all households hosted at least one couch surfer, and 1.5 per cent were hosts over a period of one year. Studies on teenagers and young adults report much higher prevalence rates. Curry *et al.* (2017, p.20) report a twelve-month prevalence of 13.6 per cent in the group of US 18 to 25 year olds. A study on London/UK finds a prevalence of about 20 per cent for this group (London Assembly, 2017, p.8). Besides differences in prevalence according to age, Curry *et al.* (2017, p.21) show differences by education, income and employment status. But while other groups of homeless people such as rough sleepers differ markedly in their socio-economic profile from non-homeless, the differences are less pronounced when couch surfers are compared to the rest of the population. Accordingly, the prevalence among women and men is similar and couch surfing is prevalent in urban and as well as rural regions (Rodrigue, 2016; Kauppi, 2017; Snelling, 2017; Demaerschalk *et al.*, 2018).

As the review of previous research has shown, evidence on hidden homelessness is based on different approaches and the results are difficult to compare in an internationally comparative perspective. It has also shown that evidence on Germany is particularly scarce. In general, homelessness increased significantly over the last years (BMAS, 2020). But until recently, figures in national social reporting contained only estimates of an advocacy group (BAG-W). There is some social reporting at community level or the level of Federal States, most notably in the state of North Rhine-Westphalia (NRW, 2019). Recently, at national level, data was collected from local authorities, job centres and NGO services (Busch-

Geertsema *et al.*, 2019; Busch-Geertsema *et al.*, 2020). Furthermore, legislation was passed that such institutional data will be collected for an overarching statistic (Bundestag, 2020). While this closes part of the gap in national social reporting on homelessness, there is hardly any data on homeless people who are not using institutional services, on couch surfing or other forms of hidden homelessness. This paper provides first survey evidence on the prevalence of couch surfing in Hamburg, the second largest city in Germany, and at national level.

Data Collection

I use an indirect approach to survey hidden homeless people who live with friends or family. In population-wide multi-topic telephone surveys (CATI), respondents were asked if they had hosted friends, family or other persons who had no dwelling of their own over the last 12 months.

In total, data collection was carried out in three surveys (see Table 1). The first contained a module on housing insecurity and perception of homelessness (Bock *et al.*, 2019) but only one question directed at hidden homelessness. Interviews were conducted from January to early March 2019. The first survey showed that a relevant number of respondents did host people who had no dwelling of their own. Building on the experiences of the first survey, we carried out a second survey in which a larger number of questions was added (Bock *et al.*, 2020). Interviewing took place in January and February 2020. Both surveys cover the population aged 16 years and above in Hamburg which is, with 1.8 million inhabitants, the second largest city in Germany. A university research lab facilitated the data collection. Random samples (2019: n=1 069; 2020: n=1 004) were drawn using the so-called Gabler-Häder-design (Gabler and Häder, 2002), an enhanced approach of random digit dialling. As mobile phone numbers cannot be assigned to regions or cities, the samples consist of persons who can be contacted via landline phone. Furthermore, all interviews were conducted in German. It is most likely that this results in systematic undercoverage of groups with a higher prevalence of hidden homelessness. Later in the paper, I will discuss potential bias and other caveats.

Table 1: Overview of surveys

	Hamburg 2019	Hamburg 2020	Germany 2020
type of survey	multi-topic computer-assisted telephone interview (CATI)		
conducted by	university research lab		commercial survey company
population	German-speaking persons aged 16+ living in a private household in Hamburg		German-speaking persons aged 16+ living in a private household in Germany
sampling	random sample of landline telephone numbers (Gabler-Häder design)		random sample of landline and mobile telephone numbers (ADM dual frame)
sample size	1 069	1 004	1 307
weights	design weights	design weights & raking	design weights & raking
questions on hosting homeless	1	15	5

Although the design of the third survey is similar to the first two, there are a number of marked differences. It is a nation-wide survey covering German-speaking persons aged 16 years and above living in a private household. It was administered by Kantar Public, the political and social research branch of Kantar, a commercial market research firm. A random sample was drawn using the ADM sampling system for telephone surveys, which includes mobile phone numbers (dual frame, ADM 2012). The sample consists of 1 307 persons (landline: n=1 105, mobile: n=202).

In the variables on hosting friends or family, the percentage of missing values due to not being able or willing to answer is very low (less than 0.5 per cent). As usual in telephone surveys, design weights are applied to adjust for different selection probabilities by household size and number of telephone lines. In the Hamburg 2020 and Germany 2020 surveys, raking is applied to additionally adjust for non-contact and non-response bias with regard to socio-demographic and regional characteristics.[3] As the number of observations is often small, I also report unweighted absolute numbers in addition to weighted percentages.

3 Raking or iterative proportional fitting is a technique which adjusts weights until sample distributions equal known population distributions.

Results: Hosting Couch Surfers

Table 2 shows the percentage of respondents who answered in the affirmative when asked if they had within the last 12 months hosted friends, family or other persons who had no dwelling of their own.[4] In Hamburg, 6.9 per cent (2019) and 7.4 per cent (2020) answered that they had hosted somebody. In Germany, the percentage was 5.7, as well in smaller as in larger communities and cities. After having conducted the first study, I assumed that respondents included those who hosted a homeless person but also other friends and family who needed a place to stay but were not homeless. Therefore, in the second and third study the following question was added: 'Did the person not have an apartment at all or not in your location, but in another place?'. In the following, I will consider only those who answered this additional question in the affirmative as hosts of hidden homeless, i.e. 3.0 per cent in Hamburg, 2.7 per cent in Germany and 3.3 per cent in cities with a population of 100 000 and more.

As mentioned, the second survey (Hamburg 2020) contains more information on couch surfers and their hosts. I will use this survey for more detailed analysis. But let me first add a few remarks on the differences and similarities of the results presented in Table 2. In Hamburg, the differences in the percentage of hosts varies only insignificantly from 2019 to 2020. In the nation-wide sample, the overall percentage of respondents who hosted friends and relatives is slightly lower but the percentage of respondents who hosted homeless persons is quite similar. The differences between smaller communities and larger cities with 100 000 inhabitants and above are too small to draw any substantial conclusions. In evaluating these results, one has to keep in mind that the results come from three independent samples, that the sample sizes are relatively small and that two different research facilities (university lab and commercial institute) collect the data. Given this, the results are almost astonishingly robust.

4 The exact wording of the question is as follows: "Has it happened in the last 12 months that someone has stayed with you for a night or more because he or she did not have an apartment of her or his own?"

Table 2: Hosting friends or family who do not of a dwelling

	n (unweighted)	% (weighted)
Hamburg 2019		
hosting during last 12 months	67	6.9
Hamburg 2020		
hosting during last 12 months	63	7.4
hosting during last 12 months (additional question)	34	3.0
Germany 2020		
hosting during last 12 months	67	5.7
hosting during last 12 months (additional question)	29	2.7
Germany 2020: only cities with 100 000+ inhabitants (n=829)		
hosting during last 12 months	45	5.7
hosting during last 12 months (additional question)	18	3.3

Source: own calculations, for information on data sources see Table 1. Note: "Additional question" refers to a second question that repeats explicitly that the questions are about persons who do not have a dwelling of their own (see text).

Despite this robustness, although all figures come from random samples and I use weights to compensate for non-contact and non-response, I am a bit reluctant to provide population estimates in absolute numbers. First, the number of hosts in each sample is very small. And even if one believes that statistical inference is feasible, the precision of the population estimate would be rather low. As an illustration of how precise or imprecise estimates are, I calculated confidence intervals (95 per cent significance level). For a percentage of 3.0 it ranges from 1.9 to 4.1 per cent. Thus, the interval's range of 2.2 percentage points is almost as large as the percentage itself. Accordingly, the absolute number of persons who hosted somebody – in a population of about 1.6 million – ranges from about 31 000 to 65 000. Second, and more important, this is not the number I am aiming at. For an estimate of the number of couch surfers – not hosts – I need two bits of additional information: How long do couch surfers stay with a host? Do couch surfers stay with only one host within a 12 month period or with more? Hosts, the respondents, can answer the first question but not the second. An answer to the first question is needed to estimate of the number of couch surfers per night. In addition, an answer to the second question is needed for an estimate of the total number of persons who couch surfed for at least one night within the last 12 months. Given that I am lacking information to answer the second question, I discuss only how the first estimate could be obtained, the number of couch surfers per night.

Sixty-nine per cent of the hosts in Hamburg in 2020 hosted a couch surfer for a month or longer. Due to the breakdown into groups by duration, the absolute numbers in each group are smaller than the overall number. An estimate of the average duration is less precise than that of the number of hosts. What I can say from the data is that couch surfers on average stayed longer than one night and definitely shorter than a full year. Let us just assume the average is 30 nights. From

this and the number of hosts, it would follow that in Hamburg 30 times 31 000 to 65 000 which equals 930 000 to 1 950 000 nights couch surfers were hosted in a period of 12 months, i.e., on average each of those 365 nights around 2 550 to 5 350 couch surfers.[5] Again, the range is wide and additionally it would be even wider if I had not just used a – more or less – educated guess of the average duration of a stay but had used a confidence interval of the duration. The number would be higher if an average of 30 nights per stay is too low (with 40 nights: about 3 400 to 7 100) and lower if it is too high (20 nights: about 1 700 to 3 550).

In my view, the numbers are too shaky for any substantial claim on the absolute number of couch surfers. At the same time, the magnitude of the numbers fits quite well with what is known about hidden homelessness in comparison to other forms of homelessness. It is probably higher than the number of rough sleepers that was 1 910 in Hamburg in 2018 (GOE, 2019, p.11). It is not unlikely that it is within the magnitude of the number of persons in public accommodation, which was 4 464 (GOE, 2019 p.99). But a sample of about 1 000 persons is certainly too small to provide a precise number. But the magnitude fits with other evidence. With a larger but not extremely large sample a more precise estimation of the average duration of a stay would be possible and also overall precision would be higher.[6] This should provide a sufficiently good basis for a serious estimate.

Structure of Hidden Homelessness and Other Forms of Homelessness

The questionnaire contained questions directed to the hosts on the couch surfers they hosted. Table 3 compares the characteristics of the couch surfers with what is known from a recent study on rough sleepers and persons in public accommodation in Hamburg (GOE, 2019). While the present study uses proxy information collected from the hosts, the information on the latter two groups was collected in interviews with homeless people.

5 The questionnaire also included a question if respondents were hosting a person at the time of the interview. Only one respondent currently hosted a couch surfer, i.e. 0.1 per cent of the sample.

6 Assuming again that the duration of an average stay is 30 days, with a sample of 5 000 the estimated number of couch surfers per night would fall into the range of about 3 350 to 4 550. The range is less than half as small as in a sample with about 1 000 respondents.

Table 3: Distribution of characteristics of different groups of homeless

	rough sleepers	public accommodation	staying with friends or family	
	% (weighted)			n (unweighted)
gender				
male	80.4	72.7	48.6	17
female	19.0	27.3	49.2	16
diverse	0.6	-	2.2	1
	100.0	100.0	100.0	34
age				
-29	18.2	14.4	54.1	11
30-39	24.5	25.8	24.7	11
40-59	48.7	41.2	21.2	12
60+	8.7	18.6	0.0	0
	100.1	100.0	100.0	34
event leading into homelessness				
termination (landlord), eviction	28.4	30.4	18.1	6
termination (self)	8.7	7.5	14.3	5
left joint apartment	25.8	19.3	18.0	9
left parents' home	6.2	5.6	26.2	3
left institution	14.5	15.5	23.3	10
other	16.3	21.7	0.0	0
	100.0	100.0	100.0	33

Sources: Column 1 & 2: GOE (2019), Column 3 & 4: own calculations (Hamburg 2020).

Table 3 shows that homeless people who stay with friends or relatives are more often female, compared to in other forms of homelessness.[7] About half, 49.2 per cent, are women. They are on average younger; 54.1 per cent are aged 29 years and below. That couch surfers are more often female and younger confirms the results from studies in other regions or countries. The higher share of younger age persons is reflected in a comparably high share of couch surfers who were homeless because they left their parents' home (26.2 per cent). There appears to be also a higher share of persons who left institutions. Compared to rough sleepers and persons in public accommodation, couch surfers less often became homeless because a rental contract was ended by the landlord (including eviction). Given the small numbers of respondents, all these results are to be read with some caution. But the numbers are large enough to see general patterns with regard age and gender which fit well into the results of other studies on hidden homelessness based on interviews with couch surfers themselves or on institutional information (see, e.g. Eberle *et al.,* 2009; Curry *et al.,* 2017; NRW, 2019).

7 Women are slightly underrepresented in the survey data on homeless in public accommodation. According to institutional data on this group the share of men is 65 percent, the share of women 35 percent (GOE, 2019, p.101).

Feasibility and Caveats

The results on hidden homeless in the paper are obtained via an indirect approach: I identified hosts of couch surfers in telephone interviews with respondents randomly selected from the population and collected data on the hosts and proxy data on the couch surfers. The results discussed so far show that this approach leads to consistent results over three independent samples and that these results fit well into the – rather scarce – evidence from previous research using other approaches. In this section I discuss a number of obvious and not so obvious caveats of the approach taken in this study. The following questions structure my discussion: 1) Can respondents who hosted couch surfers be reliably identified? 2) Can the hosts provide sufficiently accurate proxy information on the couch surfers? 3) Which sample size is needed to provide sufficiently precise estimates? 4) How likely is it that hosts of couch surfers are selected into the sample and participate in the survey?

1. Can respondents who hosted couch surfers be reliably identified?

As discussed, a general question on hosting friends or relatives who do not have a dwelling results in a rather high percentage of positive answers. A second, more explicit question on having no dwelling of one's own reduces the percentage by more than half. In combination with the first question, the second question makes clear that it is only about persons who stay with the host who do not have an apartment and not persons who do not have an apartment at the place they are currently staying (e.g., visiting friends or family). Still, further research on the exact wording and combination of the main questions would be helpful. For instance, Eberle *et al.* (2009, p.37f) use a wording which stresses "lack of money or other means of support", "no other alternatives" and ask about the freedom to decide about the end of the stay.[8] It is standard practice to gather evidence on the effects of wording in simple survey experiments. However, given the small number of hosts, experimental evidence would require rather large samples. Cognitive interviewing or a discussion of potential questions with focus groups might provide alternative approaches to shed more light on how the respective questions are understood. Another option would be to add an open-ended question, in which hosts are asked

[8] The question order is also different in Eberle *et al.*'s (2009) study. They ask first if somebody is currently staying with a host and later in the questionnaire if somebody stayed during the last year. The present study started with a question on persons who stayed during the last 12 months and asked later if a person is still staying with the host. The latter question adds information on the number of current couch surfers. As the number in the sample is very small I reported it only as a footnote. Still, I deem the information as valuable as it provides an additional reference point for the estimation of the number of couch surfers per night using the information on the number of couch surfers during the last 12 months and the duration of the stay.

to briefly describe in her own words the housing conditions of the couch surfer. Surveying and coding open-ended questions comes with a certain cost but as the number of hosts is small, it would be feasible also on a tighter budget.

From the results of the present study, it is clear that a single, rather general question will not reliably identify hosts of couch surfers. But it offers a way to ask a second more explicit question, which is more likely to identify homeless couch surfers. In some cases, there is also information from open-ended questions (but only if respondents did not choose one of the standardised options). From these answers and in combination with answers from questions on the housing situation before and after staying with the host, it seems that the questions identify the group in question. But these answers also show that there is a wide spectrum ranging from persons who are seemingly just in between two apartments (e.g., because they had to leave their old apartment a few days or weeks before the contract for a new apartment starts) and persons who move from couch surfing to sleeping rough. As mentioned in the discussion on how couch surfers are classified in the ETHOS typology, there is a blurry line between housing insecurity and homelessness. It is debatable if those who bridge a few days before they move to a new apartment are homeless or if this type of couch surfing is not rather a facet of housing insecurity. But one can think of it also as latent homelessness which becomes manifest if something unforeseen happens, e.g. if the contract for the new apartment is void.

2. Can the hosts provide sufficiently accurate proxy information on the couch surfers?

This is a question that I cannot answer, as I have no data gathered in interviews of the couch surfers themselves. In telephone interviews where respondents are selected randomly out of the general population, this would only be feasible if persons in households where a couch surfers stays at the time of the interview are selected (Eberle *et al.*, 2009). Given the very low selection probability, very large sample sizes would be necessary to provide robust information. Other studies have asked retrospectively if respondents had been couch surfing during the past year, years or ever (see, e.g., Crisis, 2019a). The decision to survey hosts is based on the assumption that hosts are more likely to be included in a (landline) telephone sample and are more likely to respond. If this were the case, underreporting bias would be smaller. But as there is no study that used both approaches simultaneously, there is no test of this assumption. If hosts are surveyed, in addition, one could think of a kind of referral sampling where hosts are asked to contact persons who have stayed with them. Again, the small number of hosts in combination with two further selection steps and presumably low participation rates (hosts willing to provide contact, couch surfers participating in interview) makes this approach infeasible if not applied to very large samples. Therefore, a direct recruitment of

couch surfers via snowball or ideally respondent driven sampling (RDS) seems more adequate if the indirect approach used in this study is to be complemented with interviews with couch surfers themselves.

3. Which sample size is needed to provide sufficiently precise estimates?

As mentioned multiple times in this paper, when surveying a small group such as hosts of couch surfers, sample size is an issue. The Hamburg 2020 study contains 34 hosts of couch surfers on the basis of a population sample of 1 004 respondents. With a sample five times as large, which is large but not unusual for a population sample, one could interview about 170 hosts of couch surfers. How would this change the precision of an estimated number of hosts and couch surfers that I tentatively calculated? I calculated that in a sample of n=5 000 the range would shrink by more than half. Whether this is precise enough depends on the questions which shall be answered. Such a sample would provide a more precise estimate of the number of hosts (and derived from that the number of couch surfers per night) and sufficiently precise information on the composition of couch surfers by characteristics such as age, gender and by housing situation before staying with a host. If repeated every few years, it could provide descriptive evidence on trends over time but a sample size of 5 000 would be probably too small to test for significant changes in the number of hosts and couch surfers over time unless these changes are comparably large.

Table 4: Comparison of sample characteristics with reference data

	Hamburg 2019			**Hamburg 2020**			**reference data**
	n*	%*	% (weighted)	n*	%*	% (weighted)	%
migration background[1]	196	18.4	21.4	178	17.9	24.1	31.5
not German (nation.)[2]	31	2.9	3.8	40	4.0	6.2	18.1
mobile phone use	-	-	-	959	96.7	97.4	-
landline phone use	1 059	100.0	100.0	994	100.0	100.0	-
internet use	-	-	-	956	96.6	96.8	-
	Germany 2020 (landline)			**Germany 2020 (mobile)**			**reference data**
	n*	%*	% (weighted)	n*	%*	% (weighted)	%
no right to vote[3]	29	2.6	3.9	7	3.5	4.9	10.9
mobile phone use[4]	1 004	91.5	85.8	201	100.0	100.0	81.4
landline phone use[4]	1 097	100.0	100.0	167	83.1	43.1	87.6
internet use[5]	888	81.0	75.6	185	92.0	93.1	89.0

Sources: Own calculations; reference data: 1) Statistisches Amt für Hamburg und Schleswig-Holstein: Bevölkerung mit Migrationshintergrund in Hamburg am 31.12.2017 2) Statistisches Amt für Hamburg und Schleswig-Holstein: Ausländische Bevölkerung in Hamburg am 31.12.2019, 3) Bundeswahlleiter: Wahl zum 19. Deutschen Bundestag (24. September 2017), 4) ADM 2012: 10 5) ARD/ZDF online-Studie 2019. Notes: Population aged 18 years and above, *) unweighted.

4. How likely is it that hosts of couch surfers are selected into the sample and participate in the survey?

To answer this question, I take a closer look at the characteristics of the respondents. The main criteria are nationality and so-called migration background as it must be assumed that non-German respondents are underrepresented in telephone, in particular landline, surveys due to a lower degree of technical accessibility (more often no landline phone) and due to higher non-response rates when interviews are exclusively conducted in German. Previous research shows that migrants are more often affected by homelessness. Accordingly, I assume that migrant populations have a higher likelihood of couch surfing. As a consequence, the underrepresentation of this group would result in downwardly biased estimates of couch surfing. If I further assume that there is an association between characteristics of hosts and couch surfers, I should find a higher share of hosts among the respondents with migration background or non-German nationality. In fact, in the Hamburg 2020 study, the percentage of hosts with migration background is 4.6 per cent (n=7), which is above average. I also had a look at nationality and the other data, but the number of observations is too small to report these results. Further results show that the percentage (4.9 per cent, n=6, Germany 2020) of hosts in the mobile sample is higher than in the landline sample. Due to the small number of observations, the results are rather shaky. But they certainly indicate that it is worthwhile to use different modes to survey potentially hard to reach populations such as host of couch surfers.

Table 4 shows the percentage of respondents with non-German nationality and migration background in the different samples. As I expect differences by telephone mode, the table contains information on landline and mobile samples separately. I do not discuss the distribution of characteristics such as age, gender and education. The surveys' weighting schemes are based on population distributions of these characteristics and hence, these characteristics should not be accountable for potential bias in my estimates. In the Germany 2020 study I neither have information on migration background nor on nationality. But the data contains a variable which indicates that a person has no right to vote in federal elections. In Germany, the main reason why an adult person has no right to vote is non-German nationality. Therefore, 'no right to vote' serves well as a proxy for non-German nationality. The table contains also information on reference values from population registers or other data sources, either for the population in Hamburg or in Germany. As most reference values refer to the population aged 18 years and above, I have restricted also the survey results to this age group. I first discuss the results on Hamburg. Respondents with migration background or non-German nationality are underrepresented in both samples. In the unweighted Hamburg 2020 sample 17.9 per cent of the respondents have a migration background, 4.0 per cent are of non-

German nationality. Comparing these values with the population values of 31.5 and 18.1 per cent shows the degree of underrepresentation. The application of survey weights reduces the degree of underrepresentation but a large difference in the percentage of respondents with non-German nationality remains.

In the Germany 2020 survey I do not have information on migration background. In the landline sample, the results for the percentage of those who have no right to vote, which I use as proxy for non-German nationality, are similar to the results in Hamburg. In the landline sample the unweighted percentage of respondents with no right to vote is only about a quarter of the population value. With the application of survey weights the result slightly approaches the population value but the degree of underrepresentation remains high. In the mobile sample, the degree of under presentation is a bit lower. But it must be kept in mind that the number of observations in the mobile sample is rather small.

The results have shown that migrant groups who are likely to exhibit higher percentages of hosts for couch surfers are underrepresented in all samples. Weighting reduces the under presentation but only to a certain degree. Therefore, estimates of the percentage of couch surfers in the population are likely to be downwardly biased. What could be done to reduce such bias? Including modes such as interviews via mobile phone may increase the likelihood of surveying persons who are underrepresented in landline surveys. While the first measure is quite standardly implemented in nation-wide surveys, it is difficult to implement in regional surveys as mobile phone numbers – unlike landline number – are not ordered by regions. In addition, interviewers who are proficient in languages other than German might reduce the degree of underrepresentation of migrants. But even if such steps are not undertaken, telephone surveys as used in this study will provide a baseline estimate of the number of hosts (and derived from that the number of couch surfers per night) and with a larger sample more precise evidence could be gathered on groups who are underrepresented in telephone surveys. This evidence and information on the underrepresentation of such groups could be used to estimate the extent of bias.

Discussion and Further Research Perspectives

This paper provides survey evidence on the prevalence of couch surfing as a form of hidden homelessness in Germany and the socio-demographic structure of couch surfers. I used an indirect approach and surveyed persons who hosted friends or family who were homeless. In Hamburg, 3.0 per cent of the respondents hosted a couch surfer for one or more nights during the past twelve months. The respective percentage at national level is 2.7 per cent. Using additional information

on the length of a stay, I also provided estimates of the number of couch surfers per night. As the sample size of the surveys is rather small, the precision of the estimates is low. But roughly, the estimates indicate that couch surfing is more frequent than rough sleeping and in the range of the number of homeless people in public accommodation. Hence, there is a relevant number of hidden homeless in Germany. This is not a surprising fact but up to now, this group was not covered separately in national social reporting or other studies at national level.

As the approach I have chosen was previously hardly applied and not yet in Germany, I was not only interested in providing estimates on the prevalence of couch surfing but also to explore the potential and the caveats of surveying hosts in telephone interviews. I interpret the consistency of the results over three independent samples and the fact that the socio-demographic profile of the couch surfers fits well into evidence of previous research as signs that the approach is basically feasible. As caveats, I discussed standard issues in survey research such as exact question wording or large enough sample size. The results show that additional questions help to distinguish visiting friends and family from homeless couch surfers. While a sample size of 1 000 respondents is certainly too small to survey a group such as hosts of couch surfers, I am convinced that results based on larger, but not excessively large samples (about 5 000 respondents or more) could provide estimates precise enough to complement other statistics at national level, e.g., institutional data on public accommodation or survey evidence on more general forms of housing insecurity. I reckon that implementing such a statistic on hidden homelessness, e.g., every five years, would be feasible at a manageable cost.

As an alternative to the implementation in multi-topic telephone interviews, respective questions could be placed in thematic modules on housing in recurrent household surveys. In such a framework, the main caveat of telephone surveys, the underrepresentation of certain groups of the population, may be addressed not only by assessing potential bias. Recurrent surveys have often established elaborate ways of sampling and are often run as mixed-mode surveys which aim at a high level of representation of all groups in a population. The inclusion of questions on current couch surfing (or retrospectively on a short period of 1 or 2 years) into larger surveys would provide timely data suitable for monitoring the current developments of hidden homelessness. Evidently, the inclusion of respective questions into recurrent surveys would come at some cost. But the costs might not be excessive, as only a small percentage of respondents would have to answer more than the first question. With regard to the impact of housing policies and changes in the housing market, such data would provide valuable information on a large segment of homelessness which is not covered in national social reporting in Germany and many other European countries.

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