

Hoang, Thi Truong An; Knabe, Andreas

Article — Published Version

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Journal of Population Economics

Provided in Cooperation with:

Springer Nature

Suggested Citation: Hoang, Thi Truong An; Knabe, Andreas (2025) : Social contacts, unemployment, and experienced well-being: evidence from time-use data, Journal of Population Economics, ISSN 1432-1475, Springer, Berlin, Heidelberg, Vol. 38, Iss. 1, <https://doi.org/10.1007/s00148-025-01083-6>

This Version is available at:

<https://hdl.handle.net/10419/318553>

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Social contacts, unemployment, and experienced well-being: evidence from time-use data

Thi Truong An Hoang¹ · Andreas Knabe¹ 

Received: 23 April 2024 / Accepted: 10 January 2025
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Abstract

We analyze how differences in the frequency and intensity of social contacts contribute to the experienced well-being of employed and unemployed individuals. In the UK Time-Use Survey, we observe that people generally enjoy being with others more than being alone. The unemployed tend to feel worse than the employed when engaging in the same kind of activities, partly because they are more often alone. The unemployed cannot spend time with other people at work but spend slightly more time with private contacts than the employed. In terms of experienced well-being, the slight increase in time spent with family and friends (which people enjoy a lot) offsets the loss of work contacts (which people generally enjoy only a little). Hence, we do not find that the differences in the social-contact composition between the employed and the unemployed are associated with differences in their experienced well-being.

Keywords Unemployment · Happiness · Experienced well-being · Time use · Social contact

JEL Classification I31 · J60 · J22

Responsible editor: Milena Nikolova

✉ Andreas Knabe
andreas.knabe@ovgu.de

Thi Truong An Hoang
thi.hoang@ovgu.de

¹ Faculty of Economics and Management, Otto-Von-Guericke-University Magdeburg, P.O. Box 4120, 39016 Magdeburg, Germany

1 Introduction

Using data from the UK Time-Use Survey, our study investigates the relationship between time use, social contacts, and experienced well-being of employed and unemployed persons. We aim to analyze to what extent differences in the quantity and quality of time spent with other people are reflected in the experienced well-being of employed and unemployed persons.

It has been shown in the literature that unemployment is detrimental to various measures of subjective well-being, in particular to life satisfaction and general mental health (for a survey, see Suppa 2021). Studies on emotional well-being have found that unemployed persons also experience less positive and more negative emotions than employed persons outside of work. The negative impact of unemployment on emotional well-being during non-work activities has been called the “saddening effect” of unemployment (Krueger and Mueller 2012; Knabe et al. 2010).

Various reasons could be responsible for the saddening effect. For example, Krueger and Mueller (2012) suppose that the unemployed might have less income to spend on leisure, that there might be diminishing marginal utility of leisure, or that the unemployed might have more time to think about their misery. Another reason could be the loss of non-monetary, latent benefits of employment. In her well-known enumeration, Jahoda (1981) lists five latent benefits of work: it externally imposes a time structure on the day; enforces activities; links people to goals and purposes that transcend their own; defines personal identity and social status; and establishes social contacts outside the family. Empirical studies on the relationship between unemployment and subjective well-being support the existence of some of these latent benefits (cf. Zechmann and Paul 2019). For example, there is strong evidence that unemployment hurts because it is associated with a loss in social status and a deviation from social norms (the fourth item on Jahoda’s list; Clark 2003; Schöb 2013; Hetschko et al. 2014). There is also evidence that employment links people to transcendental goals (the third latent benefit). When people are asked about how “meaningful” or “rewarding” their daily activities are, working usually ranks on top (White and Dolan 2009; Wolf et al. 2022). McKee-Ryan et al. (2005) and Hoare and Machin (2010) provide evidence that the unemployed suffer when they feel that they do not use their time in a structured and purposeful way.

In this paper, we focus on the fifth of Jahoda’s latent benefits and examine the hypothesis that the unemployed have less contact with other people than the employed and that this contact loss relates, *ceteris paribus*, to a well-being loss experienced by the unemployed. The literature has shown that social connectedness and spending time with others generally contribute to subjective well-being (Kahneman et al. 2004). The empirical evidence on the effect of unemployment on social connectedness and isolation appears less clear. While some studies find that the unemployed feel more socially isolated (e.g., Pohlen 2019), other studies show that unemployment does not weaken the social network of affected persons (Krug and Prechsl 2022; Rözer et al. 2020). All these studies analyze surveys in

which respondents are asked to report on the general size of their social network or typical contact frequencies. To the best of our knowledge, no studies analyze these issues using diary data. Diary studies allow us to examine how much time employed and unemployed persons spend with others and their emotional well-being when engaging in specific activities alone or with others.

We use data from the UK Time-Use Survey, which contains rich information on how people spend their time, how much time they spend with different types of social contacts, and how they feel during these episodes. We focus specifically on the differences in time use and experienced well-being between employed and unemployed persons. We measure the intensity of a person's contacts by calculating the share of the total waking time spent with other people and being alone and the quality by the level of enjoyment a person perceives while spending time with these contacts. In line with the literature, we find that the unemployed feel worse than the employed during many non-work activities. However, the employed report particularly little enjoyment during work episodes. On average, the unemployed do not enjoy their days less than the employed.

The novel contribution of this study is to quantify the extent to which contacts with family members and others outside the household contribute to the experienced well-being of employed and unemployed persons. We develop a decomposition technique to identify five separate components that illuminate the role of differences in the composition of activities and social contacts as well as differences in enjoyment ratings in particular activity-contact combinations. The opportunities to spend time with others generally differ depending on a person's marital/partnership status. Thus, we conduct separate analyses for persons who are married or cohabiting, henceforth "partnered," and persons who have never been married or are divorced or widowed, henceforth "single."¹ We also verify our findings using entropy balancing, which matches the employed and the unemployed based on observable, potentially confounding factors.

Our analysis shows that the employed and the unemployed enjoy being with others more than being alone. Unemployment deprives people of the opportunity to meet others at work. Hence, the unemployed spend, on average, over two more waking hours alone than the employed. In that sense, our findings support the claim by Jahoda (1981) that access to social contacts outside the family is one of the latent benefits of work.

However, our results also suggest that the observed differences in activities and social contacts are not associated with lower levels of experienced well-being among the unemployed. We give a brief preview of our main results here. Concerning the activity composition, the unemployed benefit substantially from being able to shift time from work to other, more enjoyable activities. This shift partly captures the time-composition effect that has already been described in previous studies (Knabe et al. 2010). In this study, we not only look at differences in the type of activities but

¹ In this paper, we use the terms "partnered," "married/cohabiting," and "with partner" interchangeably for the subgroup of individuals who declare to be married or cohabiting, and at the time of the survey are living with their partner.

also at differences in the presence of other persons during these activities. We find different results for single and partnered persons. Meeting others at work does not seem to provide additional enjoyment for people with partners compared to working alone. We also do not observe significant differences in the amount of time spent with others outside of work between partnered employed and unemployed persons. Hence, differences in contact availability do not substantially contribute to the difference in experienced well-being between employed and unemployed individuals with partners. Singles, in contrast, enjoy spending their work time with others significantly more than working alone. This benefit is lost when becoming unemployed.

We also observe that single unemployed persons spend more time with others outside work than employed singles, which partially offsets the reduction in well-being from losing work contacts. Hence, we do not find a significant overall contribution of changes in social contacts to the well-being differences between employed and unemployed singles, either. These findings imply a more differentiated view of Jahoda's (1981) hypothesis that one of the latent benefits of work is the establishment of social contacts outside the family. While we find evidence that employed persons have more social contacts outside their family, the observation that this does not seem to contribute to higher emotional well-being raises doubts about whether this should be considered a latent benefit of work.

The paper is structured as follows. In the next section, we briefly review the related literature. In Section 3, we describe the data. Section 4 examines differences in time use, social contacts, and well-being between the employed and the unemployed. In Section 5, we decompose these differences in various channels. Section 6 concludes.

2 Related literature

Prior research has extensively demonstrated the adverse impact of unemployment on cognitive well-being, as measured by broad mental health indicators or life satisfaction (Clark and Oswald 1994; Winkelmann and Winkelmann 1998; Clark et al. 2001, 2010; Knabe and Rätzl 2010; Shields et al. 2009). Some studies have also examined how an individual's employment status affects their everyday emotional experiences. These investigations suggest that unemployment influences experienced well-being through two channels. On the one hand, the unemployed experience lower levels of well-being than the employed when engaged in the same kind of activities (Knabe et al. 2010; Krueger and Mueller 2012). On the other hand, employed persons rate working among the least pleasant activities during their days (Kahneman et al. 2004; White and Dolan 2009; Bryson and MacKerron 2017; Hoang and Knabe 2021a; Wolf et al. 2022). Since, by definition, the employed have to spend more time working than the unemployed, this worsens their average emotional experience over the day. The first channel is referred to as the saddening effect of unemployment, and the second as the time-composition effect (Knabe et al. 2010). The two effects work in opposite directions, such that it is unclear, *a priori*, which of the two groups feels better over the entire day.

Various studies find that the saddening and time-composition effects offset each other, such that unemployment is not negatively related to day-average experienced

well-being. This is shown by Knabe et al. (2010), Lawes et al. (2023), and Wolf et al. (2022) for Germany, Flèche and Smith (2017) for France, and Hoang and Knabe (2021a) for the UK. For the United States, Krueger and Mueller (2012) find that the saddening effect dominates when looking at the specific feelings of sadness and pain, whereas Dolan et al. (2017) do not find differences between aggregate emotional well-being measures of the employed and the unemployed.²

There are also some studies looking at how people spend their time and how they experience it depending on the presence of other people. These studies generally support the view that social contacts positively affect emotional well-being. Kahneman et al. (2004) report that socializing and intimate relations rank among the best experiences of the day based on their affect ratings. Bryson and MacKerron (2017), using self-collected data from a smartphone app, also report that people are happiest when they spend time with others, particularly with friends or their spouse/partner. This positive effect is, however, diminished when people are working. In their analysis of American time-use data, Flood and Genadek (2016) find that, controlling for hours of work, dual-earner couples spend similar amounts of time together as couples in which one partner stays at home. They also find that time spent together is associated with more happiness and less stress. Musick et al. (2016) and Flood et al. (2020) show that parents enjoy their leisure time much more when they are with their children or other adults than alone. Atalay (2024) finds that evaluative and experienced well-being is lower when people are alone during their non-work time and that the share of time spent alone has increased in the US in the last two decades. Han and Kaiser (2024) show that both men and women have lower experienced well-being on days when they spend more of their time alone, but that the negative impact is stronger for women. Hence, even though they find that the Covid pandemic affected the share of time spent alone similarly for both genders, women suffered a larger reduction in experienced well-being from it. Using American and British time-use data, Gimenez-Nadal et al. (2023) examine how workers perceive time alone and time spent with family members. Their findings show that respondents prefer togetherness over solo leisure activities.

Not all social contacts are equally enjoyable. Kahneman et al. (2004) find that individuals' emotional experiences differ depending on who they spend time with. While people are generally very happy when being with their friends, they report strong negative emotions while being with their boss. Uziel and Schmidt-Barad (2022) present evidence from an experimental survey and an experience-sampling study illustrating the significance of being able to choose one's contacts. Being with others by choice is generally much more enjoyable than being with others due to external circumstances.

Being socially integrated plays an essential part in predicting cognitive and affective well-being. Prior literature has shown, however, that there is a negative association between joblessness and social integration. The unemployed have been found to feel lonely (Morrish and Medina-Lara 2021) and socially excluded (Pohlan 2019)

² See Hoang and Knabe (2021b) for an empirical investigation of the differences between these two studies.

and to participate less in social activities (Brand and Burgard 2008; Paugam and Russell 2000; Dieckhoff and Gash 2015; Gallie et al. 1994). They belong to disadvantaged socioeconomic groups who are at risk of social isolation and have less social contact (Simone et al. 2022; Burchardt et al. 1999; Röhr et al. 2022). They suffer from the negative implications and the cumulated disadvantages of being unemployed (Gangl 2006), the feeling of shame and stigmatization (McFadyen 1995; Eales 1989; Paugam and Russell 2000; Peterie et al. 2019b), and the perception of unemployment as their fault (Lister et al. 1996; Peterie et al. 2019a). Furthermore, the literature suggests that the unemployed are caught in a vicious circle: their vulnerability to social isolation reinforces their economic disadvantages (Gallie 1999; Morrish and Medina-Lara 2021), which in turn increases their risk of social isolation further (Eckhard 2018). Some more recent studies that use panel data and can observe people before and after becoming unemployed provide more differentiated insights. Using German panel data, Krug and Prechsl (2022) observe that the structure of the social network does not change after becoming unemployed. Similarly, Rözer et al. (2020) find that, except for people over 50, unemployment generally has no adverse effects on the strength of the social network. In their Swiss panel data, they find some indication of shifts in the network structure, where contacts with colleagues or distant acquaintances are replaced by friends and family.

In most studies, the intensity of social participation has been measured by broad social indicators, such as how frequently one attends cultural events, how often one visits friends and relatives, or the number of friends and social contacts one has. Such measures and indicators can capture the frequency or magnitude of different types of social participation over more extended periods. However, they do not reflect the time intensity (length) and the quality (pleasantness) of the social contacts. Furthermore, while work may provide more opportunities to establish social contacts, employed persons are also more time-constrained, since they cannot spend much time with others outside the workplace, as well as more choice-constrained, since they typically do not choose their contacts at work (Uziel and Schmidt-Barad 2022). The unemployed, in contrast, might have a smaller number of contacts outside their household, i.e., a lower contact frequency, but more time to allocate to their existing contacts, i.e., a higher contact intensity, and in principle more freedom to shift their available time towards people whose company they enjoy. Studies by Paugam and Russell (2000) and Kunze and Suppa (2017) reveal that the unemployed participate less in formal (clubs, organizations, institutions) or public social activities (attending cultural events or going to the movies), but have higher levels of informal or private social participation (meeting friends and family, helping out neighbors, etc.).

3 Data

We analyze data from the 2014/2015 United Kingdom Time-Use Survey (UKTUS). The UKTUS is a nationally representative survey that collects information on how people use their time (Gershuny and Sullivan 2017). Respondents complete tabular diaries for up to 2 days, during which they provide detailed information about what activities they engaged in and where they sojourned at each point in time during the

day. Two additional pieces of information collected in the survey are particularly relevant to this study. First, respondents reveal whom they were with during each reported episode (spouse/partner, parents, children, other household members, other known persons, or being alone), so we have detailed information on the types, frequencies, and timing of their social contacts. Second, a subsample of these respondents is asked to rate how much they enjoyed each reported activity. To be precise, respondents were asked about each episode: “How much did you enjoy this time?” and could answer on a scale from 1 (“not at all”) to 7 (“very much”). We interpret this response as a measure of a person’s affective/experienced well-being.³ Respondents in this survey provide diaries for 2 separate days. The exact days respondents should fill out the diaries are randomly determined. Generally, one is a weekday, and the other is a Saturday or a Sunday. The dataset contains 16,550 diaries collected from 9388 individuals aged eight or older living in 4239 households. We use the diaries from all household members and from weekdays and weekends. We use the UKTUS diary weights that account for the unequal number of weekdays and weekend days. We also calculate clustered standard errors to account for the non-independence of diary-level observations from persons from the same household.

Our analysis focuses on how differences in the frequency and type of social contacts contribute to the well-being gap between the employed and the unemployed. How many opportunities a person has to be in contact with others might not only depend on their employment status but is also heavily influenced by their partnership status (Röhr et al. 2022). Married or cohabiting persons have much more social contact “by default” (with their partner), whereas singles have to actively seek contact if they do not want to be alone in their free time. We conduct our analyses separately for married/cohabiting persons and singles to account for this critical difference. We thus restrict the sample to the subsets of respondents who are either married/cohabiting or single (never married/divorced/widowed). Furthermore, we use available data about how different household members are related to validate the consistency of the actual living arrangement and the reported marital status. If a conflict is detected (e.g., when a respondent answers to be single when asked about her relationship status but reports to be the partner of another household member in another question), we remove the observation from the sample.

The UKTUS contains information about a person’s self-declared work status, labor market history, and future work intentions. We apply the ILO definition to identify employed and unemployed persons.⁴ We restrict our attention to survey participants aged 16 years and above.⁵ To be considered employed, a person has to have

³ Unlike some other time-use survey, such as the American Time-Use Survey (ATUS), the UKTUS does not collect information on a variety of positive and negative affects. Instead, respondents are only asked about their “enjoyment” of each episode. This precludes disaggregated analyses of positive and negative affects. However, Fleche and Smith (2017) have shown that a summary measure of episode enjoyment is highly correlated with common composites of separate affects (e.g., the net affect or the U-index).

⁴ Our main results do not change when, instead of the ILO definition of (un)employment, we use respondents’ self-reported employment status.

⁵ We do not apply an upper age limit in the main analysis. There are in total 111 employed persons and one unemployed person older than 65 years old who are included in our sample. Our findings remain unchanged also when considering only respondents who are between 16 and 65 years old.

been in paid work for 7 days, ending the Sunday preceding the interview, or be holding a job from which they were taking time off at the time of the interview. Unemployed persons are those who have not been working for pay on any of the 7 days ending the Sunday preceding the interview, are not just temporarily away from a job or business, have been searching for a job in the four weeks preceding the interview, and would be able to start working immediately when given a job offer. We include full-time and part-time employees and self-employed individuals but exclude full-time students. We exclude all non-employed persons who do not satisfy the ILO criteria for unemployment. To avoid an undue influence of outliers, individuals whose household income (adjusted by the modified OECD equivalence scale) belongs to the top and bottom 1% of the distribution are removed from the analyses. Finally, since we analyze the role of social contacts for individual well-being, we exclude diaries containing enjoyment scores for fewer than three waking episodes. Although each respondent is supposed to complete two diaries, there are cases where only one of the two diaries contains enjoyment ratings for at least three waking episodes. We keep this diary but remove the other diary (with fewer than three enjoyment-rated episodes) from the sample. All the diaries contain complete time-use information.

With these adjustments, we obtain a sample of 3492 individuals who report 6923 diaries with sufficient enjoyment information. The sample includes 2,555 married/cohabiting persons (2499 employed and 56 unemployed with 4960 and 111 diaries, respectively) and 937 single persons (869 employed and 68 unemployed with 1720 and 132 diaries, respectively). A caveat to our analysis is that the number of unemployed respondents is relatively small; therefore, standard errors are likely large.⁶

As mentioned earlier, some diaries might be incomplete in the sense that they contain seamless sequences of activities, but enjoyment scores for some of these activities are missing. This concerns roughly ten percent of observations (22,370 out of 224,490 waking episodes). These episodes can be used to analyze time use but not well-being.

One important aspect of UKTUS 14/15 is that all members of the same household report on the same diary days. This allows for imputing some missing observations of co-present (family) contacts. For example, if a husband's diary has missing information on co-present persons during some time interval on a diary day (so he neither reports any contacts nor being alone), but the diary of his wife reports at that exact time of the day that she was with her husband, the missing contact information for that episode in the husband's diary would be imputed as "with the spouse." Our sample has 24,698 waking episodes with missing co-present contact information. We can impute contact information for 5594 episodes with this method. If no further details about episodes with missing contact information can be acquired, they are classified as spent alone.⁷ This is a conservative assumption. If these episodes were actually spent with someone else, and

⁶ The small number of unemployed respondents partly reflects the relatively low unemployment rate in the UK in 2016 (4.9 percent, ONS 2023).

⁷ This assumption is not critical for our findings. They remain unchanged also if we ignore all episodes whose missing social-contact information cannot be imputed using other household members' diaries.

we see that joint activities are generally rated better, the average enjoyment of episodes spent alone would be biased upwards, and the well-being gap between being alone and being with contacts would appear smaller than the actual gap.

Unless stated otherwise, we apply the survey sampling diary weights provided by the UKTUS, which account for the stratification and clustering of the survey data. These weights match the distribution of age, gender, and region of residence of respondents in the UKTUS to that of the entire UK population. They also produce a uniform distribution of months of the year and days of the week.

Table 1 shows descriptive statistics of employed and unemployed persons in the subgroups of married/cohabiting and single (never married/divorced/widowed) persons. For both subgroups, the employed are around 2 years older, earn substantially

Table 1 Descriptive statistics

		Married/cohabiting		Single	
		Employed	Unemployed	Employed	Unemployed
		(1)	(2)	(3)	(4)
<i>Mean</i>					
Age		44.10 (0.29)	41.47 (2.09)	36.84 (0.56)	35.35 (1.66)
Number of children in household		0.74 (0.03)	0.91 (0.23)	0.25 (0.03)	0.33 (0.07)
Number of household members		3.21 (0.04)	3.33 (0.25)	2.51 (0.07)	2.18 (0.16)
Monthly household income (in GBP, OECD equivalence scale)		2143 (80.86)	1308 (327.78)	1947 (140.22)	743 (88.39)
Weekly working hours in main job		36.02 (0.26)	- -	35.09 (0.45)	- -
Life satisfaction level		7.81 (0.04)	6.56 (0.30)	7.18 (0.09)	5.94 (0.33)
Number of diary episodes		37.21 (0.25)	39.35 (1.96)	35.22 (0.46)	31.44 (1.57)
Episode duration (minutes)		38.70 (0.26)	36.59 (1.82)	40.89 (0.54)	45.81 (2.29)
<i>Shares (in %)</i>					
Gender	Male	53.80	47.94	48.91	62.33
	Female	46.20	52.06	51.09	37.67
Highest qualification	Degree/higher education	52.17	39.95	49.82	33.87
	A-level/equivalent	17.51	28.34	23.86	17.42
	Secondary	24.06	19.73	20.49	36.16
	No degree	6.26	11.97	5.83	12.55
Number of individuals		2499	56	869	68
Number of diaries		4960	111	1720	132
Number of episodes		184,756	4368	60,588	4172

Standard errors are in parentheses. All observations are weighted using the individual weights provided by UKTUS

higher net household income, and have higher levels of life satisfaction than the unemployed. A larger share of the employed have obtained a university degree or attended higher-education institutions than the unemployed. Roughly two-thirds of the employed are married/cohabiting compared to less than half of the unemployed. A more differentiated comparison by partnership status shows that, among the married/cohabiting, the unemployed tend to live in larger households with more children than the employed. Among the singles, employed persons report a larger average household size but fewer children in the household. There are more employed men than employed women, but there are more unemployed women than unemployed men in the married/cohabiting subgroup. The opposite holds for singles, where men account for almost two-thirds of all individuals without a job. UKTUS respondents are also asked about their satisfaction with their life in general (as a single question in the general part of the questionnaire, not for each diary). Our sample supports previous findings in the well-being literature that being married and holding a job bring significantly more satisfaction to people's lives. Persons who are employed and married/cohabiting rate their life satisfaction highest (7.81), whereas unemployed singles report the lowest life satisfaction (5.94).

Partnered persons and singles also differ in various other demographic and socioeconomic characteristics, as do the employed and unemployed within each subgroup. Compared to singles, married/cohabiting persons are generally older, live in larger households with more children, and have higher incomes. These differences illustrate that the opportunities for being with other people in daily life might differ and demonstrate the need for separate analyses of these two subgroups.

4 Differences in time use and well-being between the employed and the unemployed

In this section, we investigate how much time employed and unemployed people spend on different activities, how often they are with others or alone, and how much they enjoy their time. We categorize daily activities following the classification introduced by As' (1978). This approach organizes the wide range of activities into four broad categories: contracted time, committed time, necessary time, and free time. Contracted time covers activities related to working for income, e.g., working for pay or commuting. Committed time refers to performing duties, e.g., childcare or home production. Necessary time refers to activities that must be done to maintain and support daily life, e.g., personal care or eating. Finally, free time includes all hobbies and entertaining/relaxing activities.⁸ As' (1978) simple classification

⁸ We assign activities to the four broad categories as follows: contracted time (working for pay, breaks at work, commuting to/from work, other employment-related activities), committed time (job seeking, study/training, cooking, household management, shopping, gardening, pet care, childcare, volunteering, helping other household members), necessary time (eating, personal care, travel (for non-work reasons), free time (social life, entertainment, sports, art and hobbies, computing & other mass-media, playing games, reading, TV and video, radio and music)). We restrict our attention to the waking day, so we do not consider episodes when respondents were sleeping. Our main results are also robust to choosing less highly aggregated categories of activities.

system has been widely recognized in time-use research (e.g., Spinney and Millward 2010; Williams et al. 2016; cf. United Nations 2021).

Table 2 contains sample means of time spent in different activities and experienced enjoyment.⁹ This information is presented for four subgroups, separated by relationship status (top: married/cohabiting, bottom: singles) and employment status (left: employed, right: unemployed). Within each subgroup, time use and enjoyment are further differentiated according to the presence of social contacts. When a person spends time with family and non-family members simultaneously, we treat the episode as spending time with family, i.e., the episode is treated primarily as a family activity.¹⁰ The results show that time use and enjoyment ratings vary substantially between individuals with different employment and partnership statuses.

The employed spend about one-third of their time on work-related activities (contracted time). Within the married/cohabiting subgroup, the unemployed tend to devote more time than the employed to performing duties (+2 h) but also more time to leisure (+1.5 h). The unemployed spend most of the additional time in these activities alone. While we observe a slightly larger amount of time partnered unemployed spend with family members in non-work activities compared to employed persons (428 min vs. 391 min), the amount of time they spend with others outside their family seems to be a little smaller (35 min vs. 48 min). However, neither of these differences is statistically significant, so we cannot reliably conclude that there are differences in the time employed and unemployed persons with partners spend with others in their non-work time.¹¹

Among single individuals, we also observe that the unemployed allocate more time to committed activities than the employed (+1.5 h), but the largest difference occurs in leisure time (+3 h). Most of this additional time (50 min and 2 h 40 min, respectively) is spent alone. Hence, as for the married/cohabiting, unemployed singles spend the time the employed spend working on various other activities, but they are mostly alone. On average, unemployed singles spend 40 more minutes with family members and 22 more minutes with other acquaintances in non-work activities than the employed, but these differences are not statistically significant. We do find a statistically significant difference when we combine both categories, though ($p < 0.05$). Overall, despite being able to allocate their time freely, the unemployed do not seem to spend substantially more time with family and acquaintances than the employed do in their non-work time, implying that their lost work contacts are not entirely replaced by spending more time with others. In that sense, our results support Jahoda's (1981) hypothesis that unemployment causes a loss of social contacts.

When we compare the married/cohabiting group to the singles, we find that having a partner is associated with more time spent with household members and less

⁹ Graphical representations of the information contained in Table 2 can be found in the Supplementary Material (Figures A3 and A4).

¹⁰ We also conducted our analyses based on four contact categories where we differentiated between (1) alone, (2) only with family members, (3) with family member and acquaintances from other households, and (4) only with acquaintances from other households. This did not affect any of our main findings.

¹¹ It is worth mentioning that, while married/cohabiting employed and unemployed persons do not differ significantly in the absolute amount of time spent with family, the share of this time over their total waking time is significantly different (because the unemployed sleep more).

Table 2 Time use (minutes) and enjoyment by employment status, types of activity, and social contacts

	Employed persons						Unemployed persons					
	Time use (minutes)			Enjoyment			Time use (minutes)			Enjoyment		
	Alone	With family	With others	Total	Alone	With family	With others	Total	Alone	With family	With others	Avg. enjoym
<i>Panel A: married/cohabiting</i>												
Total walking time	311 (6)	421 (6)	215 (5)	947 (2)	4.98 (0.03)	5.64 (0.02)	4.93 (0.04)	5.27 (0.02)	432 (41)	428 (39)	35 (9)	5.85 (0.29)
<i>of which:</i>												
Contracted time	114 (4)	30 (2)	166 (5)	310 (5)	4.58 (0.05)	4.73 (0.09)	4.64 (0.05)	4.63 (0.04)	0	0	0	-
Non-work time	198 (4)	391 (6)	48 (2)	637 (5)	5.18 (0.03)	5.70 (0.02)	5.85 (0.04)	5.56 (0.02)	432 (41)	428 (39)	35 (9)	5.85 (0.29)
<i>of which:</i>												
Committed time	66 (2)	107 (3)	11 (1)	185 (3)	4.77 (0.04)	5.28 (0.03)	5.45 (0.09)	5.11 (0.03)	180 (23)	118 (19)	11 (3)	5.29 (0.49)
Necessary time	67 (2)	122 (2)	17 (1)	206 (3)	5.13 (0.03)	5.68 (0.03)	5.74 (0.06)	5.52 (0.02)	114 (16)	129 (13)	8 (2)	5.99 (0.33)
Free time	64 (2)	162 (3)	20 (1)	246 (3)	5.69 (0.04)	6.01 (0.02)	6.15 (0.05)	5.94 (0.02)	138 (19)	182 (24)	17 (7)	6.14 (0.34)
												5.72 (0.13)

Table 2 (continued)

	Employed persons					Unemployed persons												
	Time use (minutes)					Enjoyment				Time use (minutes)				Enjoyment				
	Alone	With family	With others	Total		Alone	With family	With others	Avg. enjoym	Alone	With family	With others	Total	Alone	With family	With others	Avg. enjoym	
<i>Panel B: single</i>																		
Total wak- ing time	452 (11)	175 (9)	307 (9)	934 (5)	5.21 (0.05)	5.73 (0.05)	5.27 (0.06)	5.34 (0.04)		575 (33)	191 (26)	139 (22)	904 (15)	5.46 (0.13)	5.54 (0.16)	6.31 (0.17)	5.60 (0.11)	
<i>of which:</i>																		
Contracted time	113 (6)	23 (3)	190 (7)	326 (8)	4.52 (0.10)	4.92 (0.17)	4.77 (0.08)	4.70 (0.07)		0	0	0	0	-	-	-	-	
Non-work time	339 (9)	151 (9)	117 (5)	607 (8)	5.41 (0.04)	5.83 (0.06)	6.04 (0.05)	5.65 (0.03)		575 (33)	191 (26)	139 (22)	904 (15)	5.46 (0.13)	5.54 (0.16)	6.31 (0.17)	5.60 (0.11)	
<i>of which:</i>																		
Committed time	79 (3)	38 (3)	20 (2)	138 (4)	4.90 (0.07)	5.43 (0.09)	5.62 (0.08)	5.16 (0.05)		130 (17)	62 (13)	37 (12)	228 (24)	5.07 (0.18)	4.88 (0.25)	6.62 (0.15)	5.24 (0.16)	
Necessary time	116 (4)	51 (3)	39 (2)	206 (4)	5.32 (0.05)	5.78 (0.06)	5.96 (0.05)	5.57 (0.04)		141 (13)	45 (7)	34 (8)	220 (14)	5.43 (0.15)	5.52 (0.20)	6.33 (0.24)	5.59 (0.14)	
Free time	144 (5)	63 (4)	58 (3)	264 (5)	5.80 (0.05)	6.12 (0.07)	6.24 (0.06)	5.98 (0.04)		304 (30)	84 (14)	68 (13)	455 (28)	5.64 (0.17)	6.04 (0.15)	6.16 (0.22)	5.80 (0.14)	

Standard errors are (clustered) in parentheses. Contracted time, working and work-related activities; committed time, activities related to fulfilling duties; necessary time, personal care, eating, etc.; free time, activities related to leisure. Differences between E and UE which are statistically significant at least at 10%-level are shown in italic letters

time alone but also less time solely spent with others who are not from one's household. Among all subgroups, employed persons with partners spend the smallest amount of time alone, while unemployed persons with partners allot the least time to meet exclusively with people not from their families. Comparing the daily activities of the married/cohabiting and the singles, we find that the former generally devote more time to committed activities, for example, home management and childcare, while the latter spend more time on leisure.

When examining self-reported enjoyment levels, we find (perhaps unsurprisingly) that individuals enjoy their leisure time more than working or fulfilling other responsibilities. For any activity, doing it alone is less enjoyable than doing it with others, be they family members or acquaintances. When employed, spending time with others during working time is perceived as better than working alone (although the difference is not statistically significant for married/cohabiting persons, both concerning mean enjoyment and the distribution of enjoyment scores). Nevertheless, average enjoyment during work episodes with others is still lower than average enjoyment during non-work activities, even when the latter are performed alone. Regardless of employment and partnership status, individuals tend to report their highest enjoyment when engaging in non-work activities solely with non-household acquaintances and their lowest scores when performing activities alone. Partnered unemployed persons spend the most time, and also the most time alone, of all subgroups on committed activities, yet they rate this time worst for their experienced well-being. Unemployed singles allot about half of their time to leisure and enjoy it very much. Although they more often have to spend their free time alone, which is less pleasurable than free time with family and acquaintances, it still delivers more pleasant experiences than other types of activities.

One might argue that the experience of unemployment could be very different for short-term and long-term unemployed persons. On the one hand, the additional free time when unemployed might be enjoyable in the short-run, as a change from the day-to-day stress of working life, even if one has to be alone often. But as unemployment lasts, being alone might become more depressing, social contact with previous colleagues might fade, etc. On the other hand, the happiness literature has shown that people can adapt to many unfortunate circumstances over time. In our sample, we have both short-term and long-term unemployed respondents (39 and 56 respondents who have been unemployed for less or more than 1 year, respectively; 29 respondents did not provide information on unemployment duration). When running separate analyses for both groups, we do not find that their time-use and enjoyment patterns differ. However, the sample sizes are rather small, so subgroup estimates are relatively imprecise, and one can also not reliably conclude that there are no differences between the short- and the long-term unemployed.¹²

¹² Since the UKTUS is a cross-sectional dataset containing observations of different people, one might be worried about endogenous selection. If those individuals who suffer most from unemployment return to employment faster, the well-being loss from unemployment would be underestimated. Since we do not find higher well-being among the long-term unemployed, there is no strong evidence for this kind of selection. However, this does not preclude other kinds of selectivity, e.g., differential selection into unemployment.

The well-being literature has found evidence that unemployment produces stigma and shame. The results in this analysis can be interpreted as preliminary evidence that these adverse psychological effects of unemployment are visible in the cognitive dimension of well-being (life satisfaction). At the same time, they do not seem to affect unemployed people's ability to enjoy their time and contact with other people in everyday life very much. We do not see that unemployed people would withdraw from their social contacts or that they could not enjoy meeting with others. Quite to the contrary, the unemployed enjoy spending time with others very much. The time spent with other acquaintances even belongs to the most enjoyable moments of their day. Hence, we do not find evidence that the unemployed would be less able than the employed to enjoy the time they spend with others. Our time-use investigation suggests, however, that they cannot replace most of the social contacts they lose at work with additional contacts to family members or acquaintances in their non-work time.¹³

5 Decomposing the well-being differences between employed and unemployed persons

In the previous section, we have illustrated that the main reason why the unemployed spend, on average, more time alone than the employed is because they lose contact with other people at work, which they cannot adequately replace by other contacts during non-work activities. We also observe that both the unemployed and the employed generally enjoy any activity more if it is not done alone but with others. This observation suggests that part of the saddening effect of unemployment, i.e., the observation that the unemployed often have lower experienced well-being than the employed even when both engage in the same kind of activities, might be explained by the fact that the unemployed are more often alone in these activities. In this section, we explore this hypothesis in more detail and examine to which extent the loss of social contacts at work and its partial replacement by other contacts contribute to the experienced well-being of the employed and the unemployed.

As a starting point, we decompose the well-being difference between the employed and the unemployed into a *time-composition effect* and a *saddening effect*. This two-step decomposition has already been applied in this context by Knabe et al. (2010). In this study, we extend this decomposition by further breaking down these two effects, taking differences in the prevalence of social contacts into account. This leads to a five-step decomposition of the difference in experienced well-being between the employed and the unemployed, capturing differences in the composition and duration of activities, the composition and frequency of social contacts, and the ratings of experienced well-being. In the

¹³ We also conduct regression analyses of life satisfaction and day-average enjoyment on employment status, the extent of social contacts, and other covariates. The results are presented in the Supplementary Material (Tables A5 and A6). These regressions provide further support for our finding that the extent of social contacts is generally positively associated with life satisfaction and with experienced enjoyment. We also find that contact to persons from outside one's household are less beneficial for well-being if they take place at work.

following subsections, we first reproduce the two-step decomposition and then describe and conduct the five-step decomposition. In the last subsection, we test the robustness of our findings when we reweight the data using entropy balancing, which makes the subsamples of employed and unemployed persons more similar regarding relevant covariates.

5.1 Two-step decomposition

Table 3 contains the results of the two- and five-step decompositions, separated by relationship status (married/cohabiting on the left, single on the right). The first line in the table shows the average enjoyment of partnered and single employed persons (5.271 and 5.338, respectively). To determine the time-composition effect, we hypothetically reallocate the time use of an average employed person to different activities to match that of the average unemployed. The enjoyment levels

Table 3 Two-step and five-step decompositions with social contacts

Married/cohabitating		Single	
Average employed person		Average employed person	
5.271 (0.023)		5.338 (0.036)	
"Time-composition effect"	-0.024 ** (0.012)	-0.072 *** (0.025)	
	5.247 (0.026)	5.266 (0.045)	
	0.262 *** (0.027)	0.329 *** (0.043)	
	5.434 (0.034)	5.596 (0.042)	
	0.099 *** (0.007)	0.068 *** (0.008)	
	5.534 (0.032)	5.664 (0.041)	
"Saddening effect"	-0.080 *** (0.021)	-0.033 * (0.018)	
	5.454 (0.043)	5.631 (0.041)	
	-0.144 (0.147)	-0.060 (0.123)	
	5.309 (0.146)	5.604 (0.116)	
Average unemployed person		Average unemployed person	

Standards errors from (clustered) bootstrapping with 5000 replications in parenthesis. Significance level: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

in each type of activity remain unchanged. This shift would result in a large and statistically significant increase in experienced well-being (+0.262 for the partnered, +0.326 for the singles). This illustrates that the opportunity to use one's time freely instead of having to work could, as such, be beneficial for well-being.

However, the unemployed generally do not enjoy their free time as much as the employed. The saddening effect captures how the day-average enjoyment of employed and unemployed persons differs, assuming they could spend their time similarly. Our results for married or cohabiting couples show this would lead to a reduction in enjoyment (−0.224), which is, however, not statistically significant. The time-composition and saddening effects offset each other, such that we only find a small and statistically insignificant difference in day-average enjoyment between employed and unemployed persons with partners. For the singles, the saddening effect is much smaller and not statistically significant. Average enjoyment is significantly larger for unemployed than for employed singles.

5.2 Five-step decomposition

Using the information with whom people spend each episode, we further decompose the observed well-being differences to illuminate the role of social contacts in explaining the well-being gap between employed and unemployed people.

Let $s_{i,j}^k$ be the average share of waking time that individuals in group $k \in \{E, U\}$ (where E and U denote employed and unemployed persons, respectively) spend in activity $i \in \{1, \dots, I\}$ with contacts $j \in \{a, f, o\}$ (denoting alone, family, and others, respectively). The total share of time that an average individual in group k spends in activity i is then given by $s_i^k = \sum_{j \in \{a, f, o\}} s_{i,j}^k$, with $\sum_{i=1}^I s_i^k = 1$ for each $k \in \{E, U\}$. Let activity $i = 1$ be contracted time (“work”) and activities $i \geq 2$ be all non-work activities. The average enjoyment experienced by individuals of group k in activity i with contact j is denoted by $\epsilon_{i,j}^k$.

As in the two-step composition, we start with a representative employed person whose enjoyment ratings and share of time-use by activities and social contacts reflect the average of all employed persons in the sample (first line in Table 3), which is given by

$$\sum_{i=1}^I \sum_{j \in \{a, f, o\}} s_{i,j}^E \epsilon_{i,j}^E \quad (1)$$

In the first step, we are interested in the importance of meeting other people at work for individual well-being. We calculate how the average enjoyment of an employed person would change if she supposedly had to spend her entire working time alone (*contact loss at work*). We construct a hypothetical person whose episodes with contacts at work are treated as work episodes alone. The experienced well-being would then be

$$s_1^E \epsilon_{1,a}^E + \sum_{i=2}^I \sum_{j \in \{a, f, o\}} s_{i,j}^E \epsilon_{i,j}^E \quad (2)$$

As seen in Table 3, the reduced time spent with contacts at work contributes negatively to the day-average enjoyment of married/cohabiting people (-0.024). However, the magnitude of the estimated contribution is relatively small. For the singles, we find a substantially larger negative effect (-0.072). This contrast suggests that work contacts might be more important for singles, perhaps because they need to actively socialize in non-work time if they want to spend time with someone else, but less so for the married/cohabiting who, by default, have immediate access to private contacts in daily life.

The second step of the decomposition identifies an *activity-composition effect*. While the employed have to work, the unemployed can choose more freely what activities they engage in over the day. We examine what would happen to the average experienced well-being if the person constructed in the previous step, who spent all working hours alone, could shift this time to non-work activities but would still have to engage in them alone. For this decomposition, we assume that, after this shift, the total time share in each activity corresponds to the average observed among the unemployed. We maintain the time shares spent with family and others at the average level of the employed and treat the residuals as time spent alone.¹⁴ The experienced well-being would then be

$$\sum_{i=2}^I \left[\left(s_i^U - \sum_{j \in \{f,o\}} s_{i,j}^E \right) \epsilon_{i,a}^E + \sum_{j \in \{f,o\}} s_{i,j}^E \epsilon_{i,j}^E \right] \quad (3)$$

This change in the activity composition results in a statistically significant increase in enjoyment, which is also the single-largest channel we identify in our five-step decomposition ($+0.187$ for partnered people, $+0.329$ for singles). Our result suggests that it is the type of activities that people engage in that matters most for their experienced well-being. One can also see that the activity-composition effect is much stronger for singles than for married/cohabiting persons. As seen in the previous section, single unemployed persons engage more in free-time activities, while partnered ones devote more to committed time. Since leisure is generally more enjoyable than other kinds of activity for individuals of all considered subgroups, this might explain why the activity-composition effect is much larger for singles than partnered individuals.

At this point in our decomposition, the hypothetical employed person has shifted all working hours to non-work activities and assumedly spends the additional non-work time alone. However, this employed person might want to use some of the additional time to meet other people. The third step restores the relative contact distribution of the employed within each activity but applies it to the total share of time spent by the unemployed on this activity. The experienced well-being then becomes

$$\sum_{i=2}^I \sum_{j \in \{a,f,o\}} \frac{s_{i,j}^E}{s_i^E} s_i^U \epsilon_{i,j}^E \quad (4)$$

¹⁴ In our data, the residual is positive for all non-work activities, i.e., $s_i^U - \sum_{j \in \{f,o\}} s_{i,j}^E > 0 \forall i \geq 2$.

The well-being effect of this (potential) *contact gain in non-work activities* is positive and statistically significant for both groups. Since time with others is generally perceived as more enjoyable than time alone, increasing the amount of time spent with others leads to more enjoyment. We find a larger effect for the partnered group (+0.099) than the singles (+0.068), perhaps because living with a partner generally enhances the availability of social contacts, particularly from one's household and a spouse's circle of friends.

The first three steps of the five-step decomposition jointly constitute the time-composition effect of the two-step decomposition. The time-composition effect captures the hypothetical well-being change that would arise if employed people could shift their working time to non-work activities but maintain their average enjoyment levels in each kind of activity. Formally, this corresponds to the experienced well-being of $\sum_{i=2}^I s_i^U \epsilon_i^E$, which is the same as the one in Eq. (4) since $\epsilon_i^E = \sum_{j \in \{a,f,o\}} (s_{ij}^E / s_i^E) \epsilon_{ij}^E$. In the five-step decomposition, we decompose this change into a part attributable to the pure change in types of activities and another part that can be attributed to the differences in the prevalence and types of social contacts people have in these activities. Our results suggest that partnered and single people benefit from less time working. The contact effects, however, differ between the two groups. For those with partners, losing contacts at work does not matter much for well-being, but the potential ability to spend more time with friends and family in the gained non-work time could have a positive and statistically significant impact on well-being. Combining both effects shows that the latter significantly dominates the former effect. Singles lose enjoyment when they cannot meet other people at work anymore. They also benefit from the potential enhancement of private contacts. Both effects are of similar magnitude but operate in different directions, so the combined effect is not statistically different from zero.

We now turn to steps 4 and 5, which further decompose the saddening effect of the two-step decomposition. In step 3, we assumed that the contact composition in the additional non-work time could be the same as that in the observed non-work time (i.e., for each activity i we imposed the shares s_{ij}^E / s_i^E on the entire time share s_i^U). For various reasons, this might not be the case. Potential contacts, i.e., family and friends, might not be available during the daytime or the unemployed might not want to meet other people as much. In either case, the contact composition of an actual unemployed person might not be the same as that of the hypothetical employed person with a fully flexible schedule postulated in step 3. Hence, the fourth step applies the actual contact distribution of the unemployed, such that experienced well-being is

$$\sum_{i=2}^I \sum_{j \in \{a,f,o\}} s_{ij}^U \epsilon_{ij}^E \quad (5)$$

This reflects the enjoyment change that would take place if the prevalence of social contacts corresponded to its actual values among the unemployed. This fourth step (*contact composition when unemployed*) shows that both groups would experience significantly lower average enjoyment than hypothesized in step 3. This suggests that the unemployed suffer from a contact loss in the sense that they cannot

enjoy their day as much as they would if they could combine the more advantageous contact structure of an employed person with the time availability of the unemployed.

In the fifth and last step, we now account for the differences in the enjoyment that employed and unemployed people perceive even if both perform the same activities and have the same social contacts. When assigning the actually observed enjoyment level of unemployed people to the hypothetical person constructed in step 4, we arrive at the actual average of unemployed persons in the sample whose day-average well-being is given by

$$\sum_{i=2}^I \sum_{j \in \{a,f,o\}} s_{ij}^U \epsilon_{ij}^U \quad (6)$$

The change in average enjoyment obtained in this last step can be referred to as an adjusted saddening effect. It is the original saddening effect from the two-step decomposition but cleansed of the impact of changes in the composition of social contacts. Even though the point estimates of this effect are sizable (especially for the married/cohabiting group), neither of the two estimates is statistically significant.¹⁵

Summing up, the extended decomposition shows that the most important driver of the gap in experienced well-being between the employed and the unemployed is the difference in how they allocate their time to different activities. The more time individuals spend on leisure, the more they enjoy their days on average. This also explains why the unemployed without partners, who allocate the largest share of time to leisure among the four groups, have the highest day-average enjoyment score, even though they report the lowest life satisfaction. Interestingly, while there are substantial differences between the employed and the unemployed regarding who they meet during the day and for how long, these differences in social contacts contribute only little to the total well-being gap.

When looking at single and partnered persons separately, we find that married/cohabiting people enjoy contact at work only a little, so they do not seem to suffer much when losing them due to unemployment. Even though they would benefit if they used the additional time to meet other people, we do not see an increase in the amount of non-work time they spend with others. Hence, the total effect of combining all three social-contact channels is small and not statistically different from zero. For singles, we observe that employed people would lose more experienced well-being if they had to give up spending time with others at work. They could fully

¹⁵ One could also imagine different orderings of the specific decomposition steps. However, these seem intuitively less appealing or would produce inconsistencies than the chosen order. For example, one could switch the order of the time-composition and the saddening effect. However, since no enjoyment information is available for work activities for the unemployed, one could not assign the enjoyment levels of unemployed persons to all considered activities. The “contact loss at work”-effect has to be placed before the activity-composition effect. Otherwise, there would not be any work episodes left for which the enjoyment contribution of having contacts at work could be determined. Placing the “contact gain in non-work activities”-effect before the “activity composition”-effect is problematic because one would have to assign contacts with friends and family that actually take place during nonwork activities to times when respondents are still observed at work. For these reasons, we believe that our proposed order of decomposition is best suited to reveal the separate contributions of contacts and activities.

offset this loss if they used their expanded free time to meet others. However, we only see a slight increase in the amount of non-work time during which singles meet other people. This increase suffices to produce a statistically significant increase in the enjoyment derived from having more non-work contacts.

Taking all three effects together, we find that the contact loss at work is at least partially offset by more non-work contacts, such that the total effect is not statistically different from zero. Hence, neither for partnered nor for single persons do we find evidence that the differences in the contact composition between the employed and the unemployed contribute to differences in their experienced well-being.¹⁶

It is worth noting the similarity between our decomposition approach and a standard Kitagawa–Blinder–Oaxaca decomposition (KBO). In fact, when we run a regression of episode enjoyment on a fully interacted set of activity-type and contact-type dummies, weighting the observations in the regression using episode durations and cross-sectional diary weights and then conduct a KBO of mean enjoyment differences based on that regression, we obtain results that are very similar to the ones presented in Table 3. One difference between our approach and a KBO arises from the treatment of episodes with missing enjoyment information. In our decomposition, we first determine average enjoyment levels in the different activity-contact combinations and then assign these to hypothetical dairy types determined from all observed episodes with time-use information on activities and contacts. Contrary to a standard KBO, our approach thus also takes into account the time-use information contained in observations without reported enjoyment. Another difference is that our decomposition distinguishes between the (potential) “contact gain in non-work activities” and the “contact shift when unemployed.” Separately accounting for both effects allows linking our decomposition to the two-step approach, whereas the standard KBO would only yield an estimate of the sum of the two effects.

5.3 Matching employed and unemployed persons using entropy balancing

To this point, we have analyzed the differences between employed and unemployed persons. Clearly, people are not randomly assigned to the two groups. As shown in Table 1, the employed and the unemployed differ in their demographic and socioeconomic characteristics. For example, the unemployed are generally younger and have less often obtained university degrees than the employed. Hence, we cannot necessarily interpret the observed well-being differences between the two groups as causal effects of unemployment in the sense that the observed differences are the best predictor of what would happen to a representative employed person when becoming unemployed.

¹⁶ The benefits of work might not only be lost when becoming unemployed, but also when leaving the labor market for other reasons. In the supplementary material to this article, we present the results from decomposing the differences between the employed and all non-employed individuals (Table A2). To summarize the findings, the non-employed enjoy their days, on average, more than the employed. The decomposition suggests that there is no negative saddening effect for the non-employed. Moreover, married or cohabiting non-employed persons have more contacts to people outside the workplace than the employed, which further contributes to their enjoyment. Non-employed singles, on the other hand, do not seem to have more non-work contacts than employed singles.

In this subsection, we will extend our analysis by matching the unemployed and the employed to eliminate the impact of differences in observable characteristics. The matching is conducted using entropy balancing (Hainmueller 2012), which reweights all observations in the control group (the employed) in a way that their observable characteristics correspond to those of the treatment group (the unemployed). We choose age, household size, the number of children living in the household, gender, and the highest attained level of qualification as the variables on which the matching is performed.¹⁷ Entropy balancing calculates weights such that the distribution of these variables (in terms of first and second moments) is the same in the treatment and the control group. After this reweighting, the employed and the unemployed in the sample are similar in terms of age, gender structure, education, and household size while differing from each other in their employment status.¹⁸

Table 4 shows the decomposition analysis using the entropy-balanced samples. The results are very similar to those obtained with the unbalanced samples. In particular, for married/cohabiting people, we find only a small (and here even statistically insignificant) enjoyment effect of the loss of contacts at work. A large and statistically significant increase in well-being is associated with the adjusted activity composition (more time spent (alone) on non-work activities). Concerning the contact composition during non-work time, people in this group could benefit substantially from spending time with others if they spent the additional non-work time with others to the same extent as their actually observed non-work time. We find a statistically significant enjoyment gain associated with the increased non-work contacts when unemployed. On the other hand, just as in the unbalanced analysis, we see that the unemployed spend most of their additional non-work time alone, so there is no indication of well-being differences between the partnered employed and partnered unemployed when considering the total change in contact composition. The adjusted saddening effect, which remains after accounting for changes in time use and social contacts, is not statistically significant.

For singles, the results are also very similar to those of the unbalanced analysis. There is a small but statistically significant reduction in well-being from the loss of contacts at work. Differences in the composition of activities contribute positively to experienced enjoyment. The combined third and fourth steps (so the impact of the actual change in non-work contacts) are positive and statistically significant at the 10% level. This positive effect partly offsets the negative impact of losing contacts at work. The combination of all contact effects (the first, third, and fourth) is negative but small and statistically insignificant. Hence, also with entropy balancing, we do not find evidence that the experienced well-being of singles would be affected by changes in their contact composition when becoming unemployed.

Overall, most results remain unchanged when we conduct our analyses on the matched sample. This suggests that the observed differences are not driven by the

¹⁷ We choose these balancing variables because the subsamples of employed and the unemployed persons have different distributions of these variables (see Table 1), but the variables are arguably exogenous, i.e. not affected by unemployment itself. For that reason, we do not use income or life satisfaction as balancing variables, as both might be endogenous. There is sufficient overlap in the covariate distributions. The Bhattacharyya coefficient is larger than .95 for all covariates.

¹⁸ Summary statistics on the first and second moments of the balancing variables before and after entropy balancing are reported in the Supplementary Material (Table A1).

Table 4 Two-step and five-step decompositions (with entropy balancing)

Married/cohabitating		Single	
Average employed person		Average unemployed person	
"Time-composition effect"	5.285 (0.026)	5.382 (0.048)	
	-0.014 (0.015)	-0.053 * (0.030)	
	5.271 (0.029)	5.329 (0.057)	
	0.273 *** (0.029)	0.303 *** (0.049)	0.314 *** (0.039)
	5.454 (0.036)	5.632 (0.051)	
	0.104 *** (0.009)	0.064 *** (0.012)	
	5.558 (0.033)	5.696 (0.050)	
"Saddening effect"	-0.090 *** (0.022)	-0.030 * (0.017)	
	-0.249 * (0.147)	-0.092 (0.127)	
	5.468 (0.045)	5.666 (0.050)	
	-0.159 (0.147)	-0.062 (0.126)	
	5.309 (0.146)	5.604 (0.116)	

Standards errors from (clustered) bootstrapping with 5000 replications in parenthesis. Significance level: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

different compositions of the observed characteristics of the two groups. This does not preclude the possibility that there remain differences in unobserved characteristics between the employed and the unemployed, such that we do not want to suggest that their observed well-being differences can necessarily be equated with the causal impact of unemployment.

6 Conclusion

In this study, we investigate different channels that contribute to the subjective well-being of employed and unemployed persons as they experience it daily, using data that combine time-use with activity- and contact-specific well-being information. While other studies have used such data to examine the experienced well-being of parents or couples depending on their work arrangements (Flood and Genadek 2016; Musick et al. 2016), this is—to the best of our knowledge—the first study that

specifically focuses on the role of social contacts for the well-being of unemployed persons. Using rich data on time use and enjoyment over the entire day, we examine the hypotheses that the unemployed have less contact with other people than the employed, that they are less able to enjoy the remaining time they spend with other people, e.g., due to shame and perceived stigmatization, and that this taken together is reflected in lower experienced well-being of the unemployed. We develop an extended decomposition approach to identify the degree to which the ability to allocate time across activities freely, the differences in enjoyment ratings, and the access to social contacts can explain the differences in duration-weighted enjoyment scores of the employed and the unemployed.

The starting point of our analysis is the claim that one of the latent benefits of employment is the establishment of social contacts outside the family (Jahoda 1981). Our results partially support this claim. First, people generally enjoy being with others. For both work and non-work activities, we find that experienced well-being is typically higher when people engage in these activities with other people than if they are alone, and being with people from outside the household is often rated even more enjoyable than being with other household members. Second, the unemployed spend more time alone than the employed. As expected, the employed gain a large share of their social contacts at work, to which the unemployed do not have access. We also find that, although the unemployed have more available free time and are enjoying the time they spend with others, in particular with non-household acquaintances, the unemployed are not able to fully compensate for the time the employed spend meeting others at work by increasing the amount of time they spend with other contacts. One reason for this could be the time constraints of other people. Even though the unemployed have a relatively high degree of time flexibility, we observe that they meet other people more often during typical after-work hours or on the weekend.

Our decomposition shows, however, that these substantial differences in the time spent with others do not matter much for the day-average experienced well-being of employed and unemployed persons. The employed have contacts at work, while the unemployed do not, but these contacts seem to be of little value for the experienced well-being of the employed. Among partnered individuals, there is only a small and not always statistically significant positive contribution to the average enjoyment of working with others compared to working alone. Unemployed persons with partners also spend about the same amount of time with non-work contacts as the employed. Since having work contacts is not associated with higher experienced well-being among the employed, while the unemployed do not spend less time with non-work contacts than the employed, we do not find that differences in social contacts are related to well-being differences between employed and unemployed persons with partners. Among singles, in contrast, we see a slightly larger and statistically significant difference in the experienced well-being when working with others compared to working alone, but the magnitude is still relatively small. At the same time, we observe that unemployed singles can spend substantially more time (+1 h) with non-work contacts than employed singles, which benefits their experienced well-being

significantly. Overall, the well-being impacts of the contact loss at work and the contact gain during non-work activities balance one another. Hence, we also do not find evidence that the observed differences in the composition of their social contacts are associated with differences in the experienced well-being of employed and unemployed singles.

We do not intend to draw direct policy conclusions from this analysis. Even though we do not find that the unemployed suffer emotionally from having fewer social contacts, this does not imply that unemployment is not harmful to subjective well-being in general or that it should not be a political priority to reduce involuntary unemployment. We mentioned earlier that there is overwhelming empirical evidence for the adverse impact of unemployment on the human psyche. However, we hope our findings contribute to a more comprehensive understanding of why unemployment has these harmful effects. We find only partial support for Jahoda's (1981) hypothesis that unemployment hurts because, *inter alia*, it reduces the chances that people establish contact with others outside their family. While it is the case that the employed have more social contacts than the unemployed, it does not seem to increase their experienced well-being. However, these results were obtained with cross-sectional data from a single country. More research is needed to check whether similar findings can be obtained in other countries and time periods.

At a more general level, our study might be seen as support for further efforts to collect time-use data and combine it with well-being indicators. Many social surveys collect information on respondents' perceptions of how often they meet other people in general and use it to measure the social side of the population's well-being. Compared to time-use studies, such data have the advantage of not being confined to a single day, and they are easier to collect. However, they might suffer from recall or social-desirability biases. They also do not give information about respondents' emotional well-being in specific activities and with specific kinds of contact. Detailed time-use information has significant potential to better understand the validity and implications of standard summary measures of social interactions. Combining time-use data with well-being information helps us to develop a more detailed and deeper understanding of how people live and experience their lives.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00148-025-01083-6>.

Acknowledgements We would like to thank editor Milena Nikolova as well as the three anonymous referees for their very thoughtful comments and suggestions. We also benefited from very helpful suggestions made by Martijn Burger and the participants in various conference and seminar presentations. All remaining errors are our own.

Funding Open Access funding enabled and organized by Projekt DEAL.

Data availability The data used in this study are available in the UK Data Archive with the identifier <https://doi.org/10.5255/UKDA-SN-8128-1>.

Declarations

Conflict of interest The authors declare no competing interests.

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