Discussion Papers No. 650, March 2011
Statistics Norway, Research Department

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Type, number, and incidence
Recent patterns and differentials in relationship careers in Norway

Abstract:
Using data on individuals born 1946 to 1972 from the Norwegian Generations and Gender Survey (*N* = 7,587) we examine differentials in the number and incidence of co-residential relationships by gender and socioeconomic status. Regarding number of relationships, we found that women and younger respondents more often than men and older respondents reported having had two or more unions. 10% of the men and 5% of the women had no union experience by age 35. Controlling for relevant characteristics, our multivariate results showed that high income men experienced fewer unions than lower income men. Having a low income increased the odds of remaining single among men, whereas there was a positive association between tertiary education and remaining unpartnered among women.

Keywords: Cohabitation, gender, GGS, marriage, Norway, relationship career, socioeconomic resources

JEL classification: Z10, Z13, Z19

Acknowledgements: The Research Council of Norway supported this research through Grant 194222/V20

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ISSN 0809-733X
Print: Statistics Norway

Sammendrag

Tidligere studier av samlivsinngåelse har først og fremst fokusert på når og om kvinner og menn inngår sine første samliv. I denne artikkelen bruker vi data om kvinner og menn født fra 1946 til 1972 fra spørreundersøkelsen LOGG (N = 7,587) til å se nærmere på antall samliv (heterofile samboerskap og ekteskap) og tilbøyeligheten til ikke å ha samlivserfaring innen 35 årsalderen. Vi er særlig interessert i forskjeller i antall samliv og samlivserfaring etter kjønn og sosioøkonomiske ressurser (utdanning og inntekt). Våre deskriptive analyser viser at kvinner og yngre respondenter oftere har hatt to eller flere samliv sammenliknet med menn og eldre respondenter. Videre finner vi at 10 % av mennene og 5 % av kvinnene ikke hadde levd sammen med en partner ved 35-års alder. Multivariate analyser bekrefter at menn med høy inntekt hadde erfaring fra færre samliv, men oftere hadde samlivserfaring enn menn med lav inntekt. Høyt utdannede kvinner var oftere uten samlivserfaring sammenlignet med grunnskoleutdannede kvinner.

1. Introduction and background

It is by now a well-established fact that the vast majority of Norwegians start their relationship career by cohabiting and that cohabitation gradually has become widespread, accepted, and institutionalized (Noack, 2001, 2010). And, despite increasing divorce rates and postponement of first marriage, the majority of Norwegians marries eventually (Statistics Norway, 2009a, 2009b).

There are, however, considerable socioeconomic differences in union formation, and existing research shows that higher status individuals have a higher likelihood of ever marrying or cohabiting compared with lower status individuals. Albeit socioeconomic resources traditionally have been most important for men's success on the partnership market, evidence from several countries suggest that this gender difference is about to change. For instance, a range of empirical studies on timing of union formation confirm that both men and women are more likely to enter a marital or cohabiting union relative to remaining single the higher are their education and earnings (Blom, 1994; Guzzo, 2006; Oppenheimer, 1994; Kravdal, 1999; Goldstein and Kenney, 2001; Wiik, 2009).

However, less is known about the number of partnerships individuals experience and the non-occurrence of union formation. A recent Dutch study by Dykstra and Poortman (2010) is one of few who consider socioeconomic differences in the likelihood of remaining single (c.f., DePaulo and Morris (2005) and Sassler (2010) for reviews). They found that high-resource women and low-resource men born 1923 to 1963 were most likely to remain single by age 40. University educated men, however, were as likely to remain single as primary educated men (Dykstra and Poortman, 2010). In Norway, the share of single women aged 20 to 44 years increased in the period 1977 to 2001 (Noack and Seierstad, 2003) and in 1997 around 20% of men and 15% of women aged 28 to 37 had no union experience (Texmon, 1999).

Regarding research on the number of (prior) co-residential relationships, this variable is frequently included as a covariate in studies of for instance union dissolution (e.g., Lyngstad and Jalovaara, 2010). Examples of recent studies where number of unions is treated as the dependent variable are, however, rarer. Some descriptive studies do exist, and in Norway, Texmon (1999) showed that around 20% of men and women born 1920 to 1969 had experienced more than one union. Further, Noack and Seierstad (2003) found that 18% of men and women born 1955 to 1974 had lived in two or more co-residential relationships by age 35 compared with 10% of those born 1945 to 1954 and 3% of those born 1935 to 1944. Having lived in more than one relationship has, in other words, become more common.

The rising divorce rates and the growing popularity of unmarried cohabitation in Norway, particularly visible from the late 1960s and onwards, may have (had) several potential implications on the (subsequent) relationship careers of men and women. For instance, the rising divorce and union dissolution rates imply that more men and women are likely to have several partnerships over their life course. And, compared with marriage, cohabitation is more unstable (Lyngstad and Jalovaara, 2010; Texmon 1999) and most likely has lower transaction costs (i.e., lowering the threshold for forming and ending a union), implying that more individuals will have partnership experience or experience from more than one union.

At the same time, there have been important developments in women's education and labor market activity. In fact, a higher share of women has completed a tertiary education compared with men among those born in the cohorts after 1960 (Statistics Norway, 2010). And, the Scandinavian countries have the highest labor market activity rates among women in the industrialized world (Ellingsæter and Leira, 2006). Women's increasing economic independence may have altered women's and men's partner preferences. For instance, a women's attractiveness as a partner nowadays may to a larger degree depend upon the financial resources she contributes to the household (Sweeney, 2002). Alternatively, as women have become more financially independent, they may place less weight on men's economic value when choosing a partner (Press, 2004). If this is the case, socioeconomic resources might be less important for men's chances on the contemporary partnership market.

1.1 The current study

In this paper, we use data from the Norwegian Generations and Gender Survey (GGS) carried out in 2007/2008 to describe recent patterns in union formation and relationship careers among men and women aged 35 to 60 (born 1946-1972) (N = 7,587). We are particularly interested in differentials in the number and incidence of co-residential relationships by gender and socioeconomic status. As most people today have cohabitation experience, we consider cohabitation as well as marriage and subsume them (unless mentioned) interchangeably under the terms "relationship" and "union."

More precisely, we set out to answer the following research questions: i) Has there been any further increase in the number of unions across age groups, and are there differences in the number of relationships by gender as well as by education and income? ii) How many and who has no union experience by age 35? Particularly, are men more likely to end up without experience from a co-residential relationship compared with women? And, are there any gender differences in the relation between socioeconomic resources and remaining single?

2. Data and method

2.1 Data and sample

We used data from the Norwegian GGS, a nationally representative survey carried out by Statistics Norway in 2007/2008. The data were obtained through telephone interviews (used here) and a postal questionnaire. The gross sample was 24,830, whereas 14,892 respondents fulfilled the telephone interview, giving a response rate of 60%. The final data set is nationally representative of the population aged 18 to 79 years. In the descriptive analyses a non-response weight was used, to reduce any potential non-response bias related to sex, age, region and education (see Lappegård and Veenstra (2010) for information on the data).

The survey data contains complete retrospective union histories, including both marriages and cohabitations. In addition, the data were supplemented with information from administrative registers maintained by Statistics Norway. Such linking of data is facilitated through a system of universal ID numbers. In this study we used register data on respondents' education, income, and place of residence.

For the current analyses, we selected respondents born between 1946 and 1972, aged 35 to 60 at the interview (N = 7,587). 48.5 % (n = 3,679) of the respondents in our final sample were male. Due to the markedly different demographic behavior of same-sex couples (Andersson, Noack and Seierstad 2006), we excluded those currently living with a same-sex partner (n = 29, 0.4% of those living in a co-residential union).

We excluded respondents younger than 35 years (n = 3,928, 22.1% of the full sample) to allow sufficient time to have had union experience. Those older than 60 years (n = 3,348, 22.5%) were excluded because we mainly focus on younger cohorts. Also, cohabitation is much rarer among them (26.1% have cohabitation experience compared with 73.5% in the analytical sample) and few of the older respondents with union experience have lived in numerous unions (16.4% > one relationship vs. 31.5% in the analytical sample).

2.2 Measures

Retrospective union histories were used to capture the incidence and number of co-residential relationships. We analyze two outcome variables. The first of these, *number of unions*, measures the number of marital and cohabiting unions reported by respondents with experience from at least

one union at time of survey. This variable has values ranging from 1 to 5. Cohabitation leading to marriage with the same partner (i.e. premarital cohabitation) was not counted as a separate union. Our second outcome variable, *no relationship experience,* was defined as never having been married or cohabiting by age 35 (0 = *No*, 1 = *yes*). 2.8% (*n* = 208) of respondents with union experience who were older than 35 entered a first union after that age, whereas 4.9% of the sample (*n* = 375) had no union experience what so ever.

Information about respondent's education and income was taken from administrative registers. Education level was originally a variable with values ranging from 0 (none) to 8 (PhD). We recoded this variable into four categories: 1: primary education (currently 10 years); 2: secondary education (11-13 years); 3: university level, low (14-17 years); and 4: university level, high (18+ years). Respondents' annual taxable income in whole 1000s of Norwegian Kroner (NOK) at survey time was coded into (weighted) quartiles for women and men separately. Our income variable thus has the following four categories for men: 1: < 342,000 NOK; 2: 342,000 - 433,000 NOK; 3: 434,000 - 586,000 NOK; and 4: > 586,000 NOK. Women's income was coded into these groups: 1: < 251,000 NOK; 2: 251,000 - 328,000 NOK; 3: 329,000 - 412,000 NOK; and 4: > 412,000 NOK.

In our multivariate models, we controlled for several variables known to be associated with union formation. First, respondents' age at interview was grouped into five categories (1: 35-39; 2: 40-44; 3: 45-49; 4: 50-54; 5: 55-60). Next, religious belief was measured by responses to a question asking respondents to rate the importance attached to religion on a scale ranging from 1 to 4, (1 = *unimportant* and 4 = *very important*). This covariate was then dichotomised, with one meaning that religion was an (very) important aspect of the respondent's everyday life. A measure of parental divorce was incorporated in the analyses as well. Those who experienced parental divorce before the age of 19 were coded 1, whereas negative answers were coded 0. Information about centrality of place of residence comes from register data, and the original variable had four categories ranging from 1 to 4 (most central). Respondents living in the most central municipalities (4) at survey time were defined as urbanites (1 = *yes*, 0 = *no*).

In the multivariate analyses of the number of co-residential relationships, we controlled for age at first union formation collapsed into four groups: 1: 15-21 years; 2: 22-25 years; 3: 26-29 years; and 4: 30 years and above. In these models, we also included an indicator measuring whether the first union was cohabitation (1) or marriage (0).

2.3 Method

In the first part of the results section we give a brief overview of type and age at first union formation, before presenting a set of cross tabulation of the number of co-residential relationships. These descriptive results were weighted to reduce any non-response bias related to sex, age, region and education.

OLS was used to regress education and income on the number of relationships among respondents with union experience controlling for age at the interview, type of first union, age at first union formation, size of place of residence, parental divorce, and religiousness. In the multivariate analysis of differentials by education and annual income in not having experience from a co-residential union by age 35 (0 = *No*; 1 = *Yes*) we used binomial logistic regression. In these models we controlled for age at the interview, size of place of residence, parental divorce, and religiousness. The multivariate models were ran separately for men and women, and we report significant interaction terms between gender and education and income from pooled models.

Alternatively, both outcomes could have been analyzed in a multinomial logit model (e.g., 0: no unions; 1: one union; 2: two unions; 3: three or more unions). Also, zero unions could have been included into the OLS regressions. However, this would not allow us to control for type and age at first union formation, which we believe are essential.

3. Findings

At time of the interview, 77% of the respondents aged 35 to 60 (80% of the men and 75% of the women) were living in a co-residential union. Of these, 62% were married whereas 15% were cohabiting.

As a changed pattern of entry into the first union (for example a delay) can lead to differences in the later union career, we first give a brief descriptive overview of the type of and age at first union formation. We then describe the number of unions and run OLS regression models to assess which factors are associated with having few or many unions. We complete our analysis by looking closer at those without union experience.

3.1 Type of first union and age at first union formation

Table 1 shows the median age at the first union (cohabitation and marriage) for men and women by age groups. First, women begin their partnership career earlier than men. The gender difference in

the median age is stable over time and among the age groups. Further, Table 1 clearly shows that there have been few changes in age at first union formation during the last decades: In all age groups, half had cohabited or been married at least once by age 24 (men) and age 22 (women). These results are in line with earlier research (Noack and Seierstad, 2003; Texmon, 1999). The quartile range, indicating the variation in the age at first union, is stable along the age groups but slightly lower for women than for men. The higher age variation among men is evident also in other life course events, as for instance age at the first parenthood (Dommermuth, 2008).

The stability reflected in these results is astounding in a comparative perspective. In Southern and Central European countries, the age at first union formation has risen during the last decades. The main reason why Norway and the other Scandinavian countries are different at this point is the early acceptance and spreading of cohabitations. In countries were cohabitation is still not fully accepted as an alternative to marriage, the age at first union has increased parallel with the age at first marriage (Kiernan, 2000).

Table 1: Median age at first union and quartile range. By age at interview. Men (*n* = 3,679) and women (*n* = 3,908) born 1946 to 1972

	Median age first union		Quartile range	
Age at interview	Men	Women	Men	Women
35-39 (born 1967-1972)	24.7	21,7	6,6	6,3
40-44 (born 1962-1967)	24.3	21,9	6,8	5,3
45-49 (born 1957-1962)	24.3	21,3	6,9	5,3
50-54 (born 1952-1957)	24.5	21,7	6,4	5,8
55-60 (born 1946-1952)	24,1	22,0	6,3	4,8
All (born 1946-1972)	24,4	21,8	6,7	5,4

Note: Birth years are overlapping because the survey was conducted over two calendar years.

Source: GGS 2007, own calculations (weighted results).

Even though the median age at first union is stable, the start of the union career has also changed in Norway over the last decades. As Table 2 shows, the age at the first marriage is nowadays higher than a few decades ago, while the age at the first cohabitation has remained stable. Among younger respondents (< 50 years), age at the first cohabitation is only slightly higher than the age at the first union (see Table 1). For those aged 50 to 60 years, the age at the first union lies between the age of the first cohabitation and the age of the first marriage.

The last two columns in Table 2 show the percentages of respondents who started their first union with cohabitation: In the oldest age group (55 - 60 years) three-quarters of the women and half of the

men married directly without living in cohabitation. This traditional pattern has become more unusual during the last decades and only one in ten among the youngest (35 - 39 years) followed this pathway into their first union. In total, the difference between the median age at first cohabitation and first marriage is therefore more marked among the younger age groups. These results approve earlier findings (Noack and Seierstad 2003; Texmon 1999), and underline that the stable median age at first union formation of young Norwegians (see Table 1) is driven by cohabitation.

Table 2: Age at first cohabitation, first marriage and type of first union. By age at interview. Men (*n* = 3,679) and women (*n* = 3,908) born 1946 to 1972

	Median age first cohabitation		Median age first marriage		First union was cohabitation	
Age at interview	Men	Women	Men	Women	Men	Women
35-39 (born 1967-1972)	25,1	22,2	34,1	30,9	90,4	90,4
40-44 (born 1962-1967)	25,0	22,3	31,8	27,3	86,8	85,2
45-49 (born 1957-1962)	25,0	22,2	29,6	25,0	80,1	73,2
50-54 (born 1952-1957)	26,3	23,7	26,7	23,2	66,9	59,4
55-60 (born 1946-1952)	29,8	27,5	25,0	22,4	50,8	34,5
All (born 1946-1972)	25,8	23,0	29,3	25,5	75,2	68,6

Note: Birth years are overlapping because the survey was conducted over two calendar years
Source: GGS 2007, own calculations (weighted results).

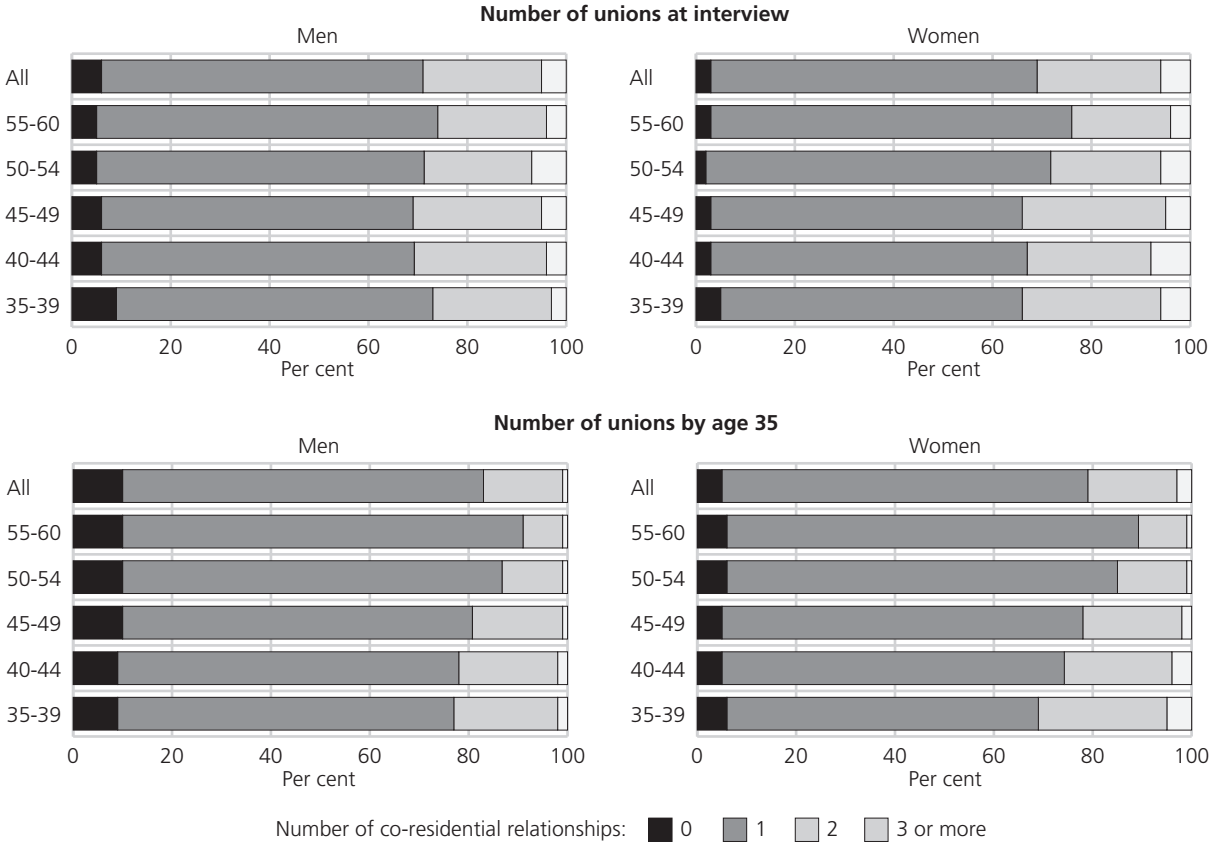
3.2 Incidence and number of relationships

The number of unions of men and women are presented in figures 1 and 2. The respondents were grouped according to their age at the interview, allowing us to assess whether there have been any changes over time. Originally this variable had values ranging from 0 to 5, but in these figures we collapsed those with three or more unions. Recall that premarital cohabitation was not counted as a separate union.

The first part of Figure 1 considers all co-residential unions reported by the respondents at time of the interview. This implies that the oldest respondents had longer time to establish one or several unions, while the youngest had less time to do so. Not surprisingly, then, we find the highest share without any union experience among the youngest respondents aged 35 to 39 years (9% of men and 5% of women). But even though the oldest respondents (i.e. 55 - 60 years) have had more time to establish several unions, comparatively few of them have lived in two or more unions. Actually, they are the age group with the highest proportion with one co-residential union, indicating that the vast majority of them have had a stable partnership career. If one looks at two or more unions, one finds the highest percentage among those aged 45 to 49 years: 31% of the men and 34% of the women in this age

group had experienced two or more unions at time of the interview. Taken together, 6% of the men and 3% of the women reported no relationship experience at time of the interview.

Figure 1: Number of co-residential relationships at interview and by age 35. Men (*n* = 3,679) and women (*n* = 3,908) born 1946 to 1972. By age at interview

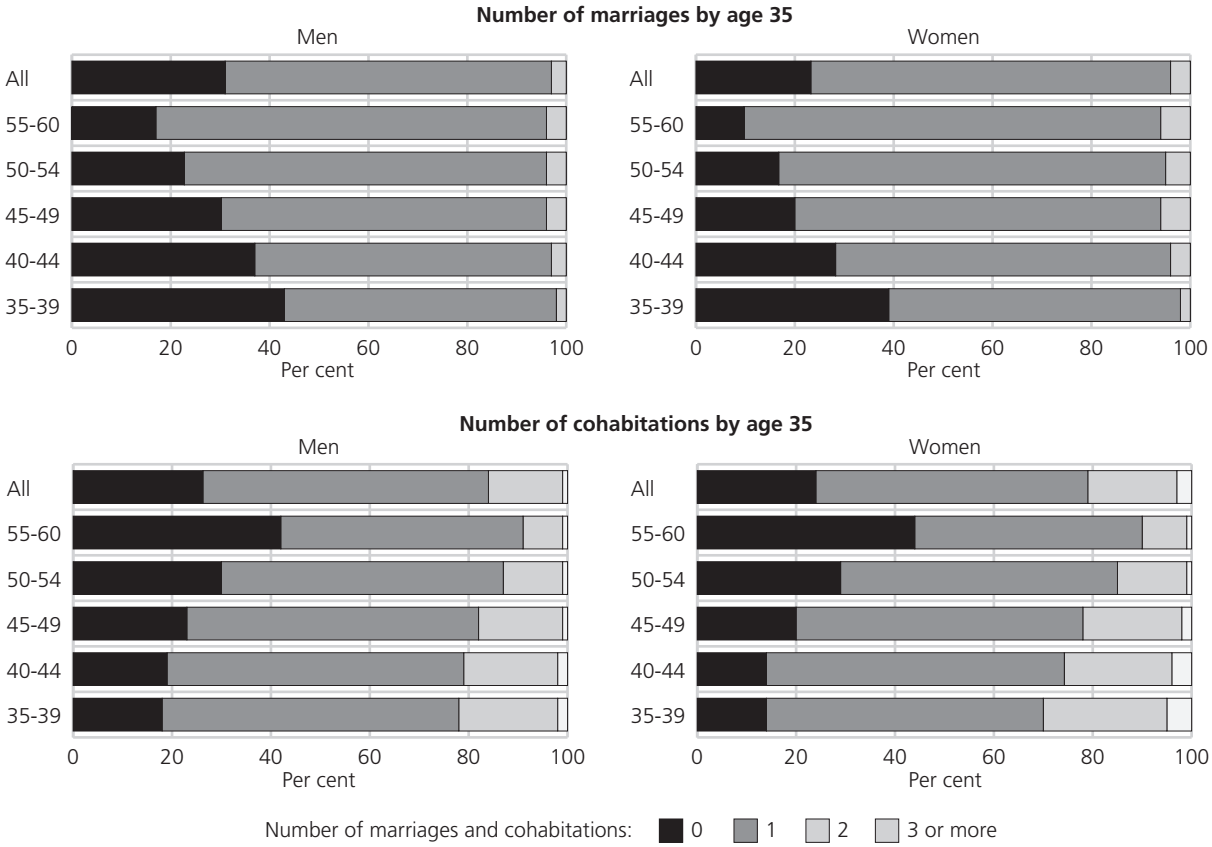


Source: GGS 2007, own calculations (weighted results).

Figure 1 also points out two gender differences. First, men more often than women have no union experience. One could argue that women begin their partnership career earlier and therefore more often have established at least one union. On the other hand, the proportion without union experience at the interview among the oldest men (5%) is higher than among women from all different age groups. The other gender difference is diplayed in the lower panel of Figure 1, which includes only unions started by age 35 and thereby allows a deeper insight into early partnership careers and their change over time. If we consider the number of relationships reported by age 35, we find that a slightly higher share of the women have experience from two or more unions (21% of the women and 17% of the men). As reported above, the median age at first union has been stable in Norway (see Table 1). In line with this, we see that there is little variation in the share

without partnership experience by age 35 among the different age groups. Overall, 10% of the men and 5% of the women had not lived in a marital or nonmarital relationship by age 35.

Figure 2: Number of marriages and cohabitations by age 35. Men (*n* = 3,679) and women (*n* = 3,908) born 1946 to 1972. By age at interview



Source: GGS 2007, own calculations (weighted results).

Nevertheless, Figure 1 indicates some important changes in the early partnership career: The younger the respondents were, the more often they had experienced more than one co-residential union by the age of 35 years. 23% of the men and 31% of the women in the youngest age group (35 - 39 years) had experienced two or more unions by age 35. In contrast, only about 10% of those aged 55 to 60 (9% of the men and 11% of the women) had entered more than one union by the age of 35. Parallel to this, we also note that the share with one union at this age line declines. As the age at first union was stable across the age groups, this points towards a more instable early partnership career in the younger generations. Especially the case of three or more unions at age 35 years is rare among the oldest respondents (< 1%) but has risen to 5% among the youngest women. Appendices 1 and 2 show the number of unions at different ages in the life course among selected age groups. These results confirm that the younger cohorts more often have lived in two or more

unions. At the same time, a slightly higher share of the youngest (female) respondents was without any union experience by age 25 compared with the older ones.

Again, the increasing prevalence of cohabitation seems to be the main background for these changes. This is confirmed in Figure 2, showing that fewer young Norwegians get married before the age of 35. At the same time, the number of cohabitating unions increases, not only those with one, but also those with two ore more cohabitations.

3.3 Incidence and number of relationships: Multivariate results

In the multivariate analyses we first focus on those respondents who had experienced at least one union by the age of 35 years and investigate which factors were associated with the total number of co-residential unions experienced. Then we have a closer look on those without union experience. We are especially interested in differences by income and education and changes over time (age groups).

We chose to run separate models for these two outcomes for several reasons. First of all, not having union experience might be associated with different factors than having several unions. Second, for the question of several unions, age at first union formation is a crucial variable. The model is therefore more distinct, if one considers only those with union experience. Third, there is only little research on the group without union experience. We would like to make a step towards filling this gap for the case of Norway.

3.3.1 Number of relationships

The multivariate results of the number of relationships experienced among those with union experience (by age 35) are presented in Table 3. 31% of men and 32% of women had lived in more than one co-residential relationship. From these OLS models it is evident that when we control for age, gender, urban residence, religiousness, age at and type of first union, and parental divorce there is no significant association between education and the number of co-residential relationships, neither among men nor women. Annual income, on the other hand, was associated with a rather small, but statistically significant (p <.01) decrease in the number of relationships for men. More precisely, men in the top two income categories (> 433,000 NOK) experienced fewer co-residential relationships compared with men in the second quartile, net of the other variables included.

We also note that men aged 35 to 39 (i.e., born 1967-1972) had experienced significantly fewer unions relative to men aged 45 to 60 (i.e., born 1946-1962), whereas there was no significant association between age and the number of unions among women, net of the other variables included. These estimates are partly at odds with our bivariate results showing that a higher share of younger respondents had experienced more than one union (particularly by age 35), and are mainly due to the fact that type of first union was controlled for. That is, when we run these models without controlling for type of first union, the association between age at interview and number of unions became statistically insignificant for men whereas women aged 55 to 60 (i.e., born 1946-1952) had significantly fewer unions compared to women in the youngest age group (not shown). Again, the strong increase in cohabitations seems to be the main reason for the changes in number of unions.

Table 3: Results from OLS regression models of number of relationships (1 - 5). Men (*n* = 3,313) and women (*n* = 3,691) aged 35 to 60

	Men			Women		
Independent variables	b	s.e	*t*- value	b	s.e	*t*-value
Education level (Primary = ref)						
Secondary	-0.04	0.03	-1.44	-0.05	0.03	-1.65
University, low	-0.01	0.03	-0.07	-0.05	0.03	-1.64
University, high	0.01	0.04	0.23	-0.01	0.05	0.27
Annual income (Q2 = ref)						
Q1	0.01	0.03	0.15	0.01	0.03	0.03
Q3[a]	-0.09**	0.03	-3.11	0.01	0.03	0.50
Q4[a]	-0.07*	0.03	-2.51	0.05	0.03	1.71
Age at interview (35-39 = ref)						
40-44	0.05	0.03	1.43	0.03	0.03	1.07
45-49	0.08*	0.03	2.42	0.04	0.03	1.17
50-54	0.09**	0.03	2.78	0.01	0.03	0.28
55-60	0.09**	0.03	2.71	-0.01	0.03	-0.11
First union was cohabitation	0.19***	0.03	7.33	0.14***	0.02	5.99
Age first union (< 22 = ref)						
22-25	-0.15***	0.03	-5.97	-0.21***	0.02	-9.12
26-29	-0.23***	0.03	-7.34	-0.28***	0.03	-8.03
> 29	-0.29***	0.04	-8.00	-0.32***	0.04	-7.29
Urban residence	0.08**	0.02	3.68	0.04*	0.02	2.12
Parental divorce	0.17***	0.04	4.57	0.29***	0.04	8.25
Religious	-0.08*	0.04	-2.21	-0.05	0.03	-1.81
Constant	1.31***			1.35***		
R^2		0.06			0.08	

[a] Gender difference was statistically significant ($p < .05$) in pooled model.
*$p < .05$. **$p < .01$. ***$p < .001$.

As expected, type of first union and age at first union formation are significantly associated with the number of unions among both women and men. That is, those whose first union was cohabitation had experience from more unions than those who married directly. Age at first union formation, on the other hand, was negatively related to the number of co-residential unions, indicating that those who began their union careers later have fewer unions in total. Moreover, urban residence and parental divorce were positively related to the number of co-residential relationships for women and men. Last, the results from the OLS models in Table 3 indicate that religious men reported having experienced fewer relationships compared with the less religious.

Results from a pooled regression model including interaction terms between gender and the education and income variables are presented in Appendix 3. This model confirms that the association between having a high annual income and the number of unions experienced was significantly more negative for men (p <.01).

Note that the number of respondents in our sample with experience from four or several unions is low (n = 59). In additional analyses, we therefore used ordered logistic regression to analyze a grouped version of the variable (1: one union; 2: two unions; 3: three or more unions). These analyses yielded results that were similar to the ones presented here (results available on request).

3.3.2 Not having union experience

The results from the logistic regression models of *not* having had experience from a relationship by age 35 are presented in Table 4. Controlling for age, urban residence, parental divorce, religiousness, we first note that annual income was significantly associated with remaining single among men. More precisely, the odds ratio that men in the lowest income group (i.e., annual income below NOK 342,000) remained single was nearly three times that of men in the reference category (i.e., annual income between NOK 342,000 and 434,000).

Among women, on the other hand, there was a strong positive association between having completed tertiary education and being unpartnered. Controlling for respondents' other characteristics, women with a lower university education had 85% increased odds of remaining single compared with their primary educated counterparts (see Table 4). Those with an advanced university degree had more than twice the odds of remaining unpartnered by age 35 compared with primary educated women. Note that there were no statistically significant differences between secondary and tertiary educated women (i.e., overlapping confidence intervals). To be sure, these highly educated women might have delayed union formation due to a lengthy schooling and may

have entered a union after the age of 35. Nonetheless, supplementary analyses confirmed that it was the highest educated women who had the highest odds of not having any union experience at the interview (not shown).

To assess whether the differences between women and men were statistically significant, we added interaction terms between gender and the education and income variables in a pooled logistic regression model (see Appendix 4). This model revealed that the association between having a low annual income and remaining single was significantly stronger for men (p <.05).

Table 4: Logistic regression models of not having relationship experience by age 35. Men (n =3,644) and women (n =3,873) aged 35 to 60

	Men			Women		
Independent variables	b	s.e	exp (b)	b	s.e	exp (b)
Education level (Primary = ref)						
Secondary	0.03	0.16	1.03	0.22	0.25	1.24
University, low	0.35	0.19	1.41	0.61*	0.26	1.85
University, high	0.35	0.24	1.41	0.95**	0.33	2.59
Annual income (Q2 = ref)						
Q1[a]	1.01***	0.16	2.74	-0.03	0.22	0.97
Q3	0.10	0.18	1.10	0.05	0.21	1.06
Q4	-0.24	0.19	0.78	-0.04	0.22	0.96
Age at interview (35-39 = ref)						
40-44	0.11	0.18	1.12	-0.12	0.23	0.89
45-49	0.15	0.18	1.16	0.01	0.22	1.01
50-54	0.18	0.18	1.19	0.01	0.23	1.01
55-60	0.14	0.17	1.15	0.10	0.22	1.11
Urban residence	0.41**	0.12	1.51	0.42**	0.16	1.53
Parental divorce	-0.19	0.21	0.83	-0.50	0.32	0.60
Religious	-0.03	0.19	0.97	0.43*	0.18	1.54
Constant	-3.00***			-3.59***		
Model x^2 (df)	85.36 (13)			35.46 (13)		
% without union experience	9.9%			5.4%		

[a] Gender difference was statistically significant (p < .05) in pooled model.
*p < .05. **p < .01. ***p < .001.

Regarding the other variables included in Table 4, we first note that urban residence was positively associated with remaining single for men and women alike. The odds of not having union experience by the age of 35 was about 50% higher for men and women residing in urban areas relative to those residing in rural areas. Last, religiousness was positively associated with not having had relationship experience among the female sub sample.

4. Summary and discussion

In this article, we used recent data from the Norwegian GGS to describe recent trends in union formation and relationship careers. The respondents in our sample were born 1946-1972, and were thus reaching typically family formation ages in a period characterized by a steady increase in cohabitation and union dissolution rates. The changes associated with the second demographic transition have been particularly marked in Norway and the rest of Scandinavia relative to comparable regions (Surkyn and Lesthaeghe, 2004). In this period there have also been important changes in women's education and labor market activity, with more women undertaking higher education and partaking in paid labor market activity.

With these changes in mind, we set out to describe differences by gender and socioeconomic status in the number of unions experienced and having no relationship experience. We also investigated whether there have been changes in the number of unions and the likelihood of remaining single. For instance, the rising divorce and union dissolution rates imply that younger men and women are likely to have several partnerships over their life course. And, compared with marriage, cohabitation most likely has lower transaction costs (i.e., lowering the threshold for forming a union), implying that more individuals will have partnership experience.

Our findings show, not surprisingly, that the vast majority chose cohabitation as the first union and that the age at first union formation (as a result) has remained stable across the age groups considered. Three-quarters of the women and half of the men in their mid to late fifties married directly compared with one in ten among those aged 35 to 39. Around 30% of the respondents had experienced two or more unions at the interview, whereas 19% had lived in more than one union by age 35. Although there was no major gender difference in the total number of unions reported by the respondents at the interview, women more often than men had lived in two or more unions by the age of 35 years.

As expected, experience from more than one union was more common among younger respondents, confirming prior research showing that experience from more than one union is increasingly common in Norway (Noack and Seierstad, 2003; Texmon, 1999). This finding reflects the rising popularity of unmarried cohabitation. Note again that premarital cohabitation was not counted as a separate union. Existing research confirm that cohabitors are less committed to and satisfied with their relationships (Wiik, Bernhardt, and Noack, 2009) and have higher breakup rates

(Lyngstad and Jalovaara, 2010) compared with those married. In this sense, cohabitation has had a destabilizing impact on the relationship careers of men and women.

10% of the men and 5% of the women in the sample used had no experience from a marital or nonmarital relationship by age 35, whereas 6% of the men and 3% of the women reported no relationship experience at time of the interview. The share without union experience in the current study is lower than that found in countries where cohabitation is less common, such as Italy, Bulgaria, Poland, and Hungary, where Hoem et al (2010) found that 10 to 20% of women had not formed a first union by the age of 35. Again, this finding is echoing the dispersion of unmarried cohabitation in Norway, but also the relatively good conditions under which young adults in Scandinavia establish themselves on the labor and housing markets (Dommermuth, 2008).

As mentioned, Texmon (1999) compared the number of unions of men and women by age 30 using data from 1997. The same age cut was also used in the tables of Appendices 1 and 2 of this study, confirming these earlier results. In addition, we found a slight increase in the share of women without any union experience by ages 25 and 30 among the youngest cohort (born 1967-1972) (see Appendix 2), which could not be included in Texmon's (1999) study. This is as expected given the slightly higer quartile range for the age at the first union among the youngest women in the current study (see Table 1). Also, Noack and Seierstad (2003) found that the variation in the age at the first union and the share without union experience was slightly higher for women born 1960 to 1974 compared with older women. But, as our mulitvariat analysis showed, these changes have not led to a higher share of women without union experience by age 35. And, an analysis of the median age at first cohabitation of cohorts born 1975 to1984 indicate no delaly in the onset of the union career (Dommermuth, Noack and Wiik, 2009).

In our multivariate models of the number of unions, we considered only respondents with union experience. Taken together, 32% of those with union experience by 35 had lived in more than one co-residential relationship. Our multivariate results showed that high income men experienced fewer unions than lower income men, even when age, age at first union formation, type of first union and other relevant characteristics were controlled. Among women, the association between income and the number of unions was the opposite, but failed to reach statistical significance. This gender difference in the association between having a high annual income and the number of unions experienced was statistically significant. We would like to stress that, although statistically significant, the magnitude of these estimates were rather modest.

Further, having a low income was positively related to not having union experience among men, whereas there was a positive association between tertiary education and being unpartnered by age 35 among women. These results are similar to those of Dykstra and Poortman (2010) who found that high-resource women and low-resource men were most likely to remain single in the Netherlands.

It is important to remember that our education and income variables were measured at time of the survey. Therefore, we are cautious to make any claims of causality and cannot be sure whether these variables actually affect the number and incidence of unions or if it is the other way around. That is to say, if annual income decreases with the number of unions and by not having union experience for men. Also the positive association between tertiary education and not having relationship experience among women may, for instance, be due to the fact that these women, as a result of not having entered a union, have had more time to pursue educational activities.

Most research has focused on the timing of (first) union formation. The non-incidence of union formation, however, has been much less investigated. Although many of the factors that affect union timing are likely to also influence its non-occurrence, they may also differ. For instance, several studies applying event history models find that income and education (controlling for school enrollment) positively influences union timing for men and women (Clarkberg, 1999; Guzzo, 2006; Kravdal, 1999; Wiik, 2009). Conversely, our multivariat models of not having union experience by age 35 showed that the tertiary educated women were more likely to remain single than were the primary educated. Some of these might have delayed union formation due to a lengthy schooling and may have entered a union after the age of 35. Nonetheless, supplementary analyses confirmed that it was the highest educated women who had the highest odds of not having union experience at the interview. Our results further showed that income was negatively related to the non-occurrence of union formation among men, in line with prior studies showing that income positively influences union timing. On the other hand, men in the two top income quartiles were less likely to have experienced several relationships. Again, this exemplifies the difference between timing and the incidence of union formation.

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Appendix A: Tables

Table A1: Percentage without any union, one union, two unions or three and more unions at different ages in the life course, by age at interview. Men (*n* = 3,679)

	by 25 years	by 30 years	by 35 years	by 40 years	by 45 years	by 50 years
Age at interview			No union			
35-39 (born 1967-1972)	37,5	16,3	9,1			
40-44 (born 1962-1967)	37,1	17,2	8,8	6,4		
45-49 (born 1957-1962)	35,8	17,2	10,1	7,3	6,3	
50-54 (born 1952-1957)	35,8	16,7	10,0	8,5	6,4	5,6
55-60 (born 1946-1952)	34,8	15,9	10,2	7,4	6,4	5,6
			One union			
35-39 (born 1967-1972)	58,5	69,3	68,1			
40-44 (born 1962-1967)	57,3	67,1	69,4	66,7		
45-49 (born 1957-1962)	61,4	70,9	70,4	68,1	65,0	
50-54 (born 1952-1957)	61,8	75,0	76,4	73,6	71,0	68,1
55-60 (born 1946-1952)	64,2	79,5	81,2	80,7	76,7	73,8
			Two unions			
35-39 (born 1967-1972)	3,7	13,3	20,5			
40-44 (born 1962-1967)	5,2	14,7	19,9	24,2		
45-49 (born 1957-1962)	2,8	11,3	18,5	22,8	24,7	
50-54 (born 1952-1957)	2,4	8,0	12,3	14,9	18,0	20,7
55-60 (born 1946-1952)	1,0	4,2	8,0	10,6	14,8	18,0
			Three or more unions			
35-39 (born 1967-1972)	0,3	1,1	2,3			
40-44 (born 1962-1967)	0,4	1,1	1,9	2,8		
45-49 (born 1957-1962)	0,0	0,6	1,1	1,8	4,1	
50-54 (born 1952-1957)	0,0	0,3	1,3	3,0	4,5	5,6
55-60 (born 1946-1952)	0,0	0,4	0,6	1,3	2,1	2,6

Source: GGS 2007, own calculations (weighted results).

Table A2: Percentage without any union, one union, two unions or three and more unions at different ages in the life course, by age at interview. Women (*n* = 3,908)

	by 25 years	by 30 years	by 35 years	by 40 years	by 45 years	by 50 years
Age at interview			No union			
35-39 (born 1967-1972)	23,3	10,4	5,8			
40-44 (born 1962-1967)	17,8	7,8	4,6	3,8		
45-49 (born 1957-1962)	17,9	7,4	4,8	4,1	3,2	
50-54 (born 1952-1957)	18,2	9,7	5,6	4,3	3,2	2,4
55-60 (born 1946-1952)	18,1	9,4	5,6	3,9	3,6	3,5
			One union			
35-39 (born 1967-1972)	62,6	64,1	63,3			
40-44 (born 1962-1967)	74,5	73,2	69,6	65,9		
45-49 (born 1957-1962)	75,9	76,7	73,3	68,6	65,0	
50-54 (born 1952-1957)	77,1	80,2	79,1	75,5	73,3	71,1
55-60 (born 1946-1952)	79,0	83,5	84,1	81,6	78,2	75,1
			Two unions			
35-39 (born 1967-1972)	13,2	22,0	25,7			
40-44 (born 1962-1967)	7,4	16,9	22,0	23,7		
45-49 (born 1957-1962)	6,2	15,6	20,4	24,0	27,4	
50-54 (born 1952-1957)	4,3	9,6	13,9	16,5	18,9	21,1
55-60 (born 1946-1952)	2,9	7,0	9,7	12,8	15,6	17,7
			Three or more unions			
35-39 (born 1967-1972)	0,9	3,5	5,2			
40-44 (born 1962-1967)	0,4	2,1	3,8	6,6		
45-49 (born 1957-1962)	0,0	0,3	1,6	3,4	4,4	
50-54 (born 1952-1957)	0,4	0,6	1,4	3,7	4,7	5,4
55-60 (born 1946-1952)	0,0	0,2	0,7	1,7	2,7	3,7

Source: GGS 2007, own calculations (weighted results).

Table A3: Results from OLS models of number of relationships (1 – 5). Men and women aged 35 to 60 (*N* =7,004)

	Model without interactions			Model with interactions		
Independent variables	b	s.e	*t*- value	b	s.e	*t*- value
Education level (Primary = ref)						
Secondary	-0.04*	0.02	-2.10	-0.04	0.03	-1.22
University, low	-0.02	0.02	-0.91	0.01	0.04	0.23
University, high	0.02	0.03	0.49	0.02	0.04	0.48
Annual income (Q2 = ref)						
Q1	0.01	0.02	0.11	0.05	0.03	0.16
Q3	-0.04	0.02	-1.92	-0.09**	0.03	-3.00
Q4	-0.01	0.02	-0.60	-0.07*	0.03	-2.33
Female (1 = yes)	-0.03*	0.02	-2.24	-0.06	0.04	-1.44
Age at interview (35-39 = ref)						
40-44	0.04	0.02	1.81	0.04	0.02	1.801
45-49	0.06*	0.02	2.54	0.06*	0.02	2.55
50-54	0.05*	0.02	2.11	0.05*	0.02	2.14
55-60	0.04	0.02	1.81	0.04	0.02	1.84
First union was cohabitation	0.17***	0.02	9.56	0.17***	0.02	9.50
Age first union (< 22 = ref)						
22-25	-0.18***	0.02	-10.94	-0.19***	0.02	-10.98
26-29	-0.25***	0.02	-11.21	-0.26***	0.02	-11.26
> 29	-0.31***	0.03	-11.26	-0.31***	0.03	-11.31
Urban residence	0.06***	0.01	3.99	0.06***	0.01	3.96
Parental divorce	0.23***	0.03	9.11	0.23***	0.03	9.12
Religious	-0.07**	0.02	-2.92	-0.06**	0.02	-2.77
Interaction terms						
Education level*female						
Secondary*female				-0.02	0.04	-0.40
University, low*female				-0.07	0.05	-1.40
University, high*female				-0.01	0.06	-0.16
Annual income*female						
Q1*female				-0.01	0.04	-0.08
Q3*female				0.10*	0.04	2.47
Q4*female				0.12**	0.04	2.73
Constant	1.35***			1.37***		
R^2		0.07			0.07	

*$p < .05$. **$p < .01$. ***$p < .001$.

Table A4: Results from logistic regression models of not having union experience by age 35. Men and women aged 35 to 60 (*N* = 7,517)

	Model without interactions		Model with interactions	
Independent variables	b	s.e	b	s.e
Education level (Primary = ref)				
Secondary	0.11	0.13	0.05	0.16
University, low	0.48**	0.15	0.33	0.19
University, high	0.56**	0.19	0.33	0.24
Annual income (Q2 = ref)				
Q1	0.67***	0.13	1.00	0.16
Q3	0.08	0.13	0.10	0.18
Q4	-0.13	0.14	-0.24	0.19
Female (1 = yes)	-0.70***	0.10	-0.68*	0.31
Age at interview(35-39 = ref)				
40-44	0.01	0.14	0.02	0.14
45-49	0.10	0.14	0.10	0.14
50-54	0.11	0.14	0.11	0.14
55-60	0.11	0.13	0.12	0.14
Urban residence	0.40***	0.10	0.42***	0.10
Parental divorce	-0.26	0.17	-0.29	0.17
Religious	0.19	0.13	0.19	0.13
Interaction terms				
Education level*female				
Secondary*female			0.22	0.30
University, low*female			0.33	0.33
University, high*female			0.66	0.40
Annual income*female				
Q1*female			-1.03***	0.27
Q3*female			-0.06	0.27
Q4*female			0.18	0.29
Constant	-2.96***		-2.97***	
x2 (df)	131.77(14)		170.30 (20)	
% without relationship experience		7.5 %		

*$p < .05$. **$p < .01$. ***$p < .001$.