

Non-Standard Work Schedules and Fertility

Non-Standard Work Schedules and Childbearing in the Netherlands: A Mixed-Method Couple Analysis

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This study examined the effect of working at non-standard times on the transition to first and second childbirth. Using quantitative couple data from two waves of the Netherlands Kinship Panel Study ($N = 742$) and semi-structured qualitative interviews ($N = 29$), we found a lower probability of having a first child when the female partner was engaged in non-standard schedules, and a higher likelihood of second childbirth for couples where either partner worked in a non-standard schedule. In line with expectations about the institutional and normative context of the Netherlands, we concluded that women adjusted their work schedules to their fertility plans and that couples had a preference for the personal care of their children rather than relying on formal care arrangements. Non-standard schedules served as a means to achieve this.

Introduction

The increasing labor-force participation of women is considered one of the most significant social changes of the past decades and has had a profound impact on the household division of labor and childbearing decisions (Goldin 2006). The new roles of women and accompanying work-family compatibility issues are seen as the driving force behind fertility decreases that most industrialized countries have experienced since the 1960s (Brewster and Rindfuss 2000; Balbo, Billari, and Mills 2013). When linking employment with childbearing,

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previous research has focused on employment characteristics such as working hours (Budig 2003; Mills et al. 2008; Begall and Mills 2013), type of contract (Kreyenfeld 2010), or work control (Begall and Mills 2011). The growth in female labor-market participation is, however, related not only to a growth in the number of hours that women work, but also *when* they work (Brewster and Rindfuss 2000). Today, two-fifths of Americans work in non-standard schedules (Presser 2003), compared to 27 percent of workers in the Netherlands and 29 percent in the United Kingdom (Presser, Gornick, and Parashar 2008). The question that arises is whether non-standard work hours lead to the postponement of childbearing due to the “unequal and negative externality to family life” (Lesnard 2008) imposed by employers’ economic interests. Or whether these schedules are conducive to childbearing by enabling couples to avoid sex-specific specialization and to desynchronize work schedules to ensure that one parent is always present (Han 2004; Presser 2003; Täht and Mills 2012).

We aim to contribute to the literature on the relationship between paid employment and fertility by examining how employment in non-standard schedules is related to the likelihood of couples to have a first or second child. Non-standard schedules refer to paid employment outside standard office hours, which we defined as paid work carried out before 7 am and after 6 pm or anytime on the weekend. This definition is in line with international research (Han 2007) and the definition used by national statistical offices (e.g., CBS 2011). We use data from the Netherlands, where compared to other European countries a relatively high proportion of employees is employed in non-standard schedules (Presser, Gornick, and Parashar 2008). Compared to the United States, the Dutch labor market is highly regulated with protection for those working part-time, on a temporary contract, and in non-standard schedules (Fouarge and Baaijens 2009; Mooi-Reci and Mills 2012). The Netherlands is also a distinct case since it has a strong tradition of female part-time work and limited use of formal childcare facilities with a preference for care of young children by one of the parents (Täht and Mills 2012; Wielers and Raven 2012).

This study extends existing research in several ways. First, although there is a substantial body of literature on the impact of women’s employment on fertility, given the high prevalence of non-standard work schedules there is a surprising lack of research studying the effect of non-standard working times on childbearing. To our knowledge, this is the first study to empirically assess the relationship between employment in non-standard schedules and fertility outcomes (see, for a review, Balbo, Billari, and Mills [2013]). Second, we include the individual work schedules of both partners and thereby acknowledge the importance of adopting a couple perspective in fertility decision-making (Bauer and Kneip 2012; Carriero, Ghysels, and Van Klaveren 2009; Corijn, Liefbroer, and Gierveld 1996). Third, the majority of research on non-standard work schedules and family related outcomes has been conducted in the United States (e.g., Perry-Jenkins et al. 2007; Presser 2003; Strazdins et al. 2006). Given the institutional differences (e.g., employment protection, working-hour legislation) between the United States and other Western countries, it is vital to explicitly consider the national context when formulating expectations and interpreting

findings. In order to gain further insight into the underlying mechanisms, we apply a mixed-method approach, drawing on both quantitative and qualitative data. We make use of two waves from a quantitative panel data set—the Netherlands Kinship Panel Study (Dykstra et al. 2004, 2007)—and complement our findings using data from qualitative interviews with a subsample of respondents from the same panel (Mills and Hutter 2007). This allows us to explore the relationship between non-standard work hours and fertility decisions from different perspectives and in a longitudinal research design.

Theoretical Background and Hypotheses

In this study, we think of fertility as purposive behavior that the involved actors can plan and control. Furthermore, fertility is regarded as a choice under alternatives, which implies that actors face competing life goals and apply some form of cost-benefit consideration to arrive at the decision to have a child or postpone a birth. This is in line with the economic theory of fertility, which conceptualizes childbearing decisions, like consumption choices, as a function of the demand for and price of children (Becker 1991). Since mothers (temporarily) withdraw from the labor market to care for a baby, their labor-force participation is assumed to increase the indirect costs of having a child, thereby lowering demand among working women. We propose that employment in non-standard schedules may have divergent impacts on couples. On the one hand, non-standard working times could operate positively as a means to flexibly combine caring for children with continued labor-force participation. On the other hand, it may result in the desynchronization of couples' joint time together, resulting in increased strain and conflict and lower partnership quality. Adopting a family-cycle perspective, we assume that once a life-course transition is made, couples adjust and reevaluate their current situation and future options. We therefore acknowledge the fundamentally different nature of the transition to having a first versus a second child and develop our theory and related hypotheses accordingly (Billari, Philipov, and Testa 2009).

In order to introduce the institutional and cultural context of this study in more detail, a description of non-standard employment and relevant policies in the Netherlands is presented first. We then continue with a discussion of previous research and derive hypotheses.

Non-Standard Work Forms in the Netherlands

The most defining feature of the Dutch labor market is the high prevalence of part-time work. Almost half of the Dutch workforce works less than 35 hours per week. Among men, around one-fifth works less than full-time, while the corresponding figure for women amounts to three quarters (Portegijs 2009). In the period 2005–2007, about 45 percent of women aged 25–49 without children and 88 percent of women with one child below school age worked less than 35 hours (CBS 2012). Since the 1990s, part- and full-time workers enjoy complete legal equality with regard to employment conditions such as minimum wage, holiday entitlements, bonuses, and training (Fouarge and Baaijens

2009). Furthermore, since 2001 the Adjustment of Working Hours Act (“Wet Aanpassing Arbeidsduur”) grants each Dutch employee with at least one year of tenure with their employer the right to request an upward or downward change in working hours once every two years (Fouarge and Baaijens 2009). This implies that there is a high degree of flexibility of working hours in the Netherlands and that part-time work is not a form of marginalized employment.

The Netherlands is also characterized by relatively strict employment protection regulations concerning dismissals (OECD 2012), as well as legal boundaries of working times (Ministry of Social Affairs and Employment 2010). The Dutch working-time law (“Arbeidstijdenwet”) applies to all workers irrespective of their contract form and stipulates the maximum number of hours employees are allowed to work per day and week.¹ The law also prescribes the number of hours of rest after (night) shifts. The working-time law requires employers to take the care responsibilities of employees into consideration when scheduling work. Even though the law does not prescribe extra payment for work at non-standard times, this is usually part of collective agreements that are negotiated per sector and are binding for all employees, irrespective of union membership. Empirical analyses controlling for the number of working hours show a significant salary bonus for night-shift workers of about 34 percent, which is about two times as much as in the United States (Täht and Mills 2014). In addition, every worker in the Netherlands is entitled to a fully paid vacation of four times the weekly working hours and to 13 free Sundays per year.

Non-standard work times are concentrated in particular occupations to a larger extent than part-time work, which is common across all sectors and levels. Two groups of occupations with high proportions of non-standard work hours can be distinguished (Täht and Mills 2014). The first are managerial jobs, where non-standard hours are mainly worked as overwork (often during weekends). The second group consists of occupations that have to be performed outside regular office hours, such as many tasks in healthcare (e.g., nurses, midwives), jobs in customer and personal services and sales, and lower-level work in transportation and production.

In a comparative study, Presser, Gornick, and Parashar (2008) found that with around one-quarter of the workforce reporting to usually work non-standard times, the incidence of non-standard work times in the Netherlands is relatively high compared to other European countries. The same study reported no significant differences in the incidence of non-standard work times by parental status. Differences between men and women were small but showed that men were more likely to work in the evening and night, while women were slightly more likely to work on the weekend (Presser, Gornick, and Parashar 2008). Examining the association between non-standard work and the number of working hours, Täht and Mills (2014) found that in the Netherlands both men and women worked less hours when engaged in night shifts, but more hours when working on the weekend, compared to respondents with regular work times. This implies that men worked overtime, that is, more than a full-time workweek of 40 hours when working on the weekend, while this was not true for women due to their lower average working hours (about 30 hours per week).

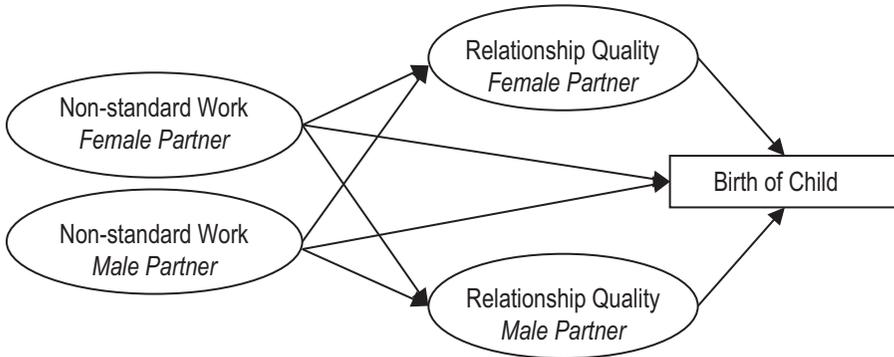
Non-Standard Schedules and the Birth of the First Child

Before the birth of the first child, most women in the Netherlands are engaged in a full-time job (Van Gils and Kraaykamp 2008). The economic costs of having a first child are particularly poignant for these dual-earner couples, as the first birth leads to reduced household resources due to a reduction in working times or even exit from the labor market of one of the partners (usually the woman) after the birth. Employees working in non-standard schedules face the extra challenge of considering how the irregular and physically demanding aspects of their jobs could be combined with parenthood. Prospective parents working shift work or night shifts are acutely aware that they are “off sync” with standard institutions, such as childcare and schools (Fenwick and Tausig 2001; Täht and Mills 2012). Especially with regard to normative expectations about the high importance of maternal care for young infants in the Netherlands (Portegijs et al. 2006), women who work non-standard times or days may view their work schedules as incompatible with motherhood. Night shifts and shift work have universally been shown to disrupt the biorhythms of individuals, leading to negative health consequences and higher levels of irritability and fatigue (Davis et al. 2008; Fenwick and Tausig 2001). Particularly women who engage in non-standard schedules suffer from higher levels of stress, guilt, and depression because of their greater involvement in child rearing and household tasks that in turn lead to higher levels of work-family conflict (Joshi and Bogen 2007; Perry-Jenkins et al. 2007). For these women, the negative physical and social consequences of non-standard schedules likely serve as a stronger inhibitor to avoid the additional physical strain of pregnancy and early childcare. We therefore expect that *couples where the female partner is engaged in non-standard work schedules will have a lower likelihood to have a first child* (hypothesis 1).

There is an extensive body of literature examining the effects of non-standard work schedules on outcome variables related to partnership functioning, such as satisfaction with family and partnership roles, partnership quality and conflict, time spent with partner or family members, and dissolution risk (see Presser [2003] for a review). A number of studies using US samples provide evidence for a negative impact of non-standard schedules on relationship quality (Perry-Jenkins et al. 2007; Presser 2000; Schulz et al. 2004; White and Keith 1990). Using a sample of couples from the Netherlands, Mills and Täht (2010) did not find evidence for a general association between non-standard work times and relationship conflict. Among women, however, working varying hours resulted in more relationship conflict. The authors conclude that the institutional context of the Netherlands mitigated some of the negative effects observed in US studies by providing better working conditions and more schedule choice. Considering these previous findings, we include relationship quality within our conceptual and empirical model (see figure 1).

Two mechanisms that predict a negative impact of non-standard schedules on relationship quality may be at play. First, the desynchronization of couples' schedules causes stress and an inability to keep up with domestic household duties and spend time together and in turn may lead to negative interactions

Figure 1. Conceptual model with direct and indirect relationships of non-standard work, relationship quality, and birth of a child



between couples (Presser 2000; Schulz et al. 2004). Second, the negative physical effects of non-standard work time, such as increased levels of tiredness and sleeping disorders, could have a negative impact on partnership quality (Fenwick and Tausig 2001). Low relationship quality in turn might negatively impact the decision to have a first child (Rijken and Liefbroer 2008). We therefore consider the possibility that the negative effect of the individual non-standard schedule of the female partner on fertility proposed in hypothesis 1 is actually mediated by relationship quality. Thus, *couples where the female partner works in non-standard schedules report lower relationship quality, which in turn results in a lower likelihood to have a first child* (hypothesis 2).

Non-Standard Schedules and the Birth of the Second Child

Previous research from the United States has demonstrated that couples attempt to maximize the amount of time that they care for their own children (Mennino and Brayfield 2002), with a preference for sharing the care between them (Riley and Glass 2012; La Valle et al. 2002). This means that for those who already have one child, non-standard schedules might operate as a means to combine parenthood with labor-market participation, particularly for women, thereby lowering the opportunity costs of having an additional child (Han 2004; Presser 2003). Recent research in the Netherlands demonstrated that, in line with this assumption, desynchronization of *parents'* schedules was intentional and desired (Carriero, Ghysels, and Van Klaveren 2009; Van Klaveren et al. 2013). The strength of the preference for desynchronized work schedules among parents is influenced by their ideals of what constitutes good family life and parenting. These perceptions vary between social groups and are influenced by welfare-state arrangements, which are decisive in constraining or enabling the ability to combine employment with parenthood (Kremer 2005; Lewis et al. 2008). The Netherlands is currently shifting from a dominant model of full-time motherhood to a model of parental sharing with the mother engaged in part-time work and both parents involved in childcare (Haas 2005; Kremer 2005; Leitner 2003). Although most mothers now stay in the labor market, the normatively

acceptable and actual levels of institutionalized care for children remain limited at a maximum of two to three days per week, and in addition, availability of formal childcare is not always sufficient (Allewijn-Tzipris and Kroneman 2006; Mills and Täht 2010; Portegijs et al. 2006). Therefore, women in the Netherlands generally strongly reduce their working hours after becoming a mother, with less than 15 percent of couples with children categorized as full-time dual earners (Van Gils and Kraaykamp 2008; Portegijs et al. 2006). Once the transition to parenthood is made and the hours of paid work have been adjusted, employment in non-standard schedules may, however, serve as a means to remain in the labor market while still conforming to cultural norms about the care of children. The high prevalence of part-time work in the Netherlands likely plays a key role in mitigating the disruptive consequences of desynchronization for family life.

The ability to adjust working hours and schedules depends on the employee's access to flexibility. Previous research has demonstrated that an important determinant of the effect of non-standard hours on family life is related to the autonomy to choose these schedules and their predictability (Le Bihan and Martin 2004; Fenwick and Tausig 2001; Golden 2001; Liu et al. 2011; Perry-Jenkins et al. 2007; Presser 2003). This flexibility in the Netherlands is provided by laws that grant employees the legal right to adjust their working hours and equal conditions in full- and part-time work. In addition, empirical research has shown that the proportion of employees with access to flexible work is high in comparison with other European countries (Carriero, Ghysels, and Van Klaveren 2009).²

With regard to the division of child rearing among partners, a number of studies using US samples have shown that fathers who are employed in non-standard schedules are more involved in childcare (Brayfield 1995; Presser 2003; Wight, Raley, and Bianchi 2008) and household tasks compared to fathers who work standard hours (Presser 1994). Also, when the mother is employed in non-standard schedules, US fathers engage in more childcare and interaction with their children (Barnett and Gareis 2007; Brayfield 1995; Presser 2000; La Valle et al. 2002). This implies that men should be more involved in family life when either partner in a couple works at non-standard times, findings that also hold in the Dutch context (Täht and Mills 2012).

Extending these theoretical arguments to fertility and assuming that being able to arrange childcare efficiently within the couple dyad lowers the perceived costs of having an additional child, we expect that *couples where the male or the female partner work non-standard schedules have a higher likelihood to have a second child* (hypothesis 3).

Data and Method

Quantitative Data

The quantitative data were taken from two waves of the Netherlands Kinship Panel Study (NKPS) collected in 2002–2004 (wave 1) and 2005–2007 (wave 2), respectively. The NKPS is a large-scale representative survey of the Dutch population aged 18 to 79 (Dykstra et al. 2004, 2007). Data were collected from

respondents and their partners using a combination of interviews and self-completed questionnaires. In the first wave, 8,161 primary respondents participated, with a response rate of 45 percent, comparable to that of other large-scale surveys in the Netherlands (Dykstra et al. 2005), which are generally lower than in other countries (De Leeuw and De Heer 2002). In the second wave, 74 percent of original respondents participated.

Because we required information about whether a child was born between the two waves of data collection, our sample consisted of respondents who were interviewed at both waves ($n = 6,093$). Since we focus on the probability of having a first or second child and conduct a couple analysis, we included only respondents (and their partners) who lived together (married or cohabiting) and had either no or one child at the time of the first wave ($n = 1,243$ couples). Because questions about children born between the two waves of data collection were asked only if the female partner was not older than 45, we restrict the age of the female partner to be between 18 and 46 at wave 2 ($n = 899$ couples). We subsequently also omitted couples who split up between the two waves ($n = 72$)³ and homosexual couples ($n = 36$). Moreover, we excluded couples where the male partner was not in paid employment at the time of the first interview ($n = 49$). These restrictions resulted in a final sample of 742 couples, of which 432 were childless and 310 had one child at wave 1 (see table 1 for descriptive statistics).

We used structural equation modeling (SEM) to test our theoretical propositions because two of our main constructs—relationship quality and non-standard work—were measured by multiple indicators. The use of SEM allowed us to model these concepts as latent constructs taking into account measurement error. Moreover, we were especially interested in the mediation effect of relationship quality (see figure 1). The advantage of using SEM rather than a series of regression models was that we could model these direct and indirect relationships simultaneously and include concepts measured by multiple indicators. Especially the last point can be problematic when instead a sum score is used.

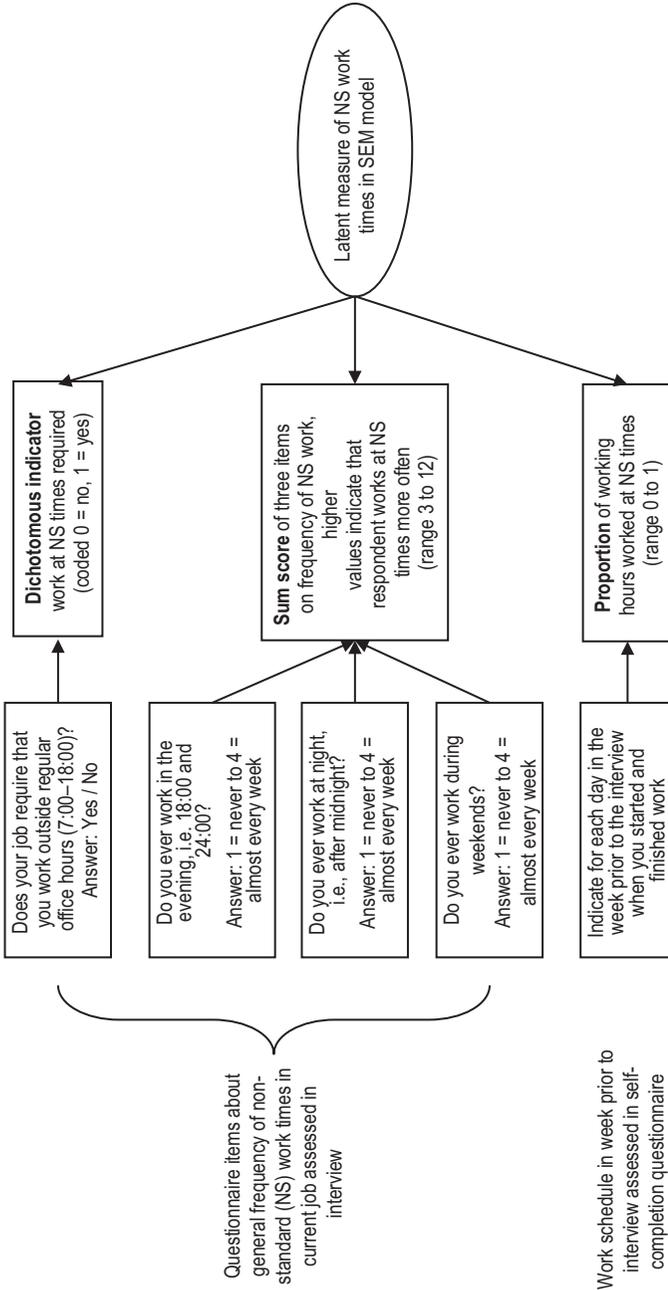
Fertility (wave 2, observed)

The dependent variable is a binary indicator of whether a couple had a child between the two waves of data collection (or was pregnant at the time of wave 2). This information was taken from the second wave of data collection, which was administered three years after the first wave (see table 1 for descriptive statistics of all variables used).

Non-standard work schedules (wave 1, latent)

Non-standard work schedules were measured for each respondent as a latent construct with three indicators. The three indicators were based on the general occurrence of non-standard work in the current job and on the actual working hours of respondents in the week prior to the interview. The construction of the indicators of non-standard work schedules is presented in figure 2.

Figure 2. Measurement and construction of indicators of latent variable of non-standard (NS) work schedules in Structural Equation Mode



schedules: evening (between 6:00 and 12:00 pm), night (after 0:00 am), and weekends (anytime). Answers were coded on a scale ranging from 1 = never to 4 = almost every week. Female partners who were not in paid work were coded as 1 = never on all three questions, and a variable controlling for the work status of the female partner was included in the analysis.

The second indicator was a dichotomous measure of whether work at non-standard times was required in the respondent's current job, coded as no = 0 or yes = 1.

The third indicator of non-standard work schedules consisted of information about respondents' work schedule in the week prior to the interview and was collected in the self-completion questionnaire. For each day of the week, respondents indicated when they started and finished work. We used this information to calculate the proportion of non-standard working hours (Monday to Friday between 6 pm and 7 am and anytime on the weekend) out of the total weekly working hours. This indicator ranged from 0 to 1, with a value of 1 indicating that all hours were worked at non-standard times or days. Female partners who were not employed were coded as 0.

The sum score of the three questions about the general frequency of non-standard hours, the question whether non-standard work is necessary in the respondents' job, and the proportion of non-standard work hours were used as indicators of the latent variable measuring the extent of work in non-standard schedules (see figure 2). The measurement model with factor loadings and residual variances of all indicators is presented in appendix 1.

Relationship quality (wave 1, latent)

Relationship quality was measured as a latent construct with four indicators. These measured agreement with the statements "We have a good relationship," "The relationship with my partner makes me happy," "Our relationship is strong," and "The relationship with my partner is very stable." Answers were coded on a five-point scale, where higher values indicated higher relationship quality. Appendix 1 shows the factor loadings and residual variances from the measurement model.

Other variables (all wave 1, observed)

When predicting a first or second birth, the age of the female partner (in years), educational attainment, relationship duration (years since the couple first started living together), marital status (0 = cohabiting, 1 = married), and working hours and status were included as control variables. Educational attainment of both partners (bivariate correlation 0.44) was measured on a 10-point scale ranging from 1 = incomplete primary education to 10 = postgraduate education. The number of weekly working hours of the male partner was included, as well as the employment status of the female partner (not working, 1 to 29 hours per week, 30 or more hours per week). See table 1 for descriptive statistics of all variables.

Analytical Strategy and Model Specification

Analyses were conducted using Mplus (Muthén and Muthén 2007). Model fit was assessed by means of the Comparative Fit Index (CFI), the Tucker–Lewis

Table 1. Descriptive Statistics of All Variables Used

	Couples without children				Couples with one child				Dif.
	N	Mean	SD	Range	N	Mean	SD	Range	
Birth of child between waves (wave 2)	432	51%		0-1	310	54%		0-1	
Age female	432	29.95	5.03	19-42	310	32.61	4.77	20-42	
Education female	420	7.02	1.77	1-10	306	6.51	1.99	1-10	***
Education male	432	6.82	1.95	1-10	310	6.25	2.27	1-10	***
Female not in paid work	430	11%		0-1	310	31%		0-1	***
Female works ≤ 30 hours	430	17%		0-1	310	55%		0-1	***
Female works > 30 hours	430	71%		0-1	310	15%		0-1	***
Weekly working hours male	432	43.63	10.16	15-130	308	42.53	9.56	5-80	
Relationship duration	430	5.19	4.43	0-23	309	8.99	5.25	0-35	***
Married	432	39%		0-1	310	78%		0-1	***
Relationship good female	395	4.75	0.52	1-5	285	4.57	0.63	1-5	***
Relationship happy female	395	4.73	0.52	1-5	285	4.54	0.64	1-5	***
Relationship strong female	395	4.72	0.53	1-5	285	4.56	0.65	1-5	***
Relationship stable female	395	4.65	0.64	1-5	285	4.51	0.70	1-5	**
Relationship good male	378	4.67	0.58	1-5	246	4.56	0.61	1-5	*
Relationship happy male	377	4.65	0.57	1-5	246	4.52	0.63	1-5	**
Relationship strong male	377	4.65	0.59	1-5	246	4.58	0.61	1-5	
Relationship stable male	377	4.59	0.61	1-5	246	4.48	0.70	1-5	*
Proportion NS hours female ^a	332	8%		0-1	187	13%		0-1	**
Proportion of NS hours male	367	9%		0-1	241	9%		0-1	

(Continued)

Table 1. *continued*

	Couples without children			Couples with one child			Dif.	
	N	Mean	SD	Range	N	Mean		SD
Sum NS work questions female ^a	345	5.17	2.33	3-12	205	5.26	2.44	3-12
Sum NS work questions male	374	6.20	2.58	3-12	248	6.07	2.48	3-12
NS work required female ^a	357	49%		0-1	208	50%		0-1
NS work required male	386	63%		0-1	257	62%		0-1

Source: NKPS wave 1 and 2, calculations by authors.

Note: NS: Non-standard.

All variables measured at wave 1 unless otherwise indicated.

Dif: t-test of differences in mean values between couples with and without children.

^aRefers to women in paid work only.

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

Index (TLI), and the Root-Mean-Square Error of Approximation (RMSEA). For the CFI and TLI, values of 0.9 or above, and for RMSEA, values of 0.05 or below, indicated acceptable fit. Since several of our outcome variables were dichotomous, we estimated our models using the Weighted Least Square Means and Variance Adjusted (WLSMV) estimator (DELTA parameterization, Muthén and Asparouhov 2002).

As a first step, the measurement model containing the four latent factors and their correlations was estimated for the entire sample and separately for couples with and without children to confirm that there was a good fit in the subgroups we were interested in. Subsequently, we estimated our measurement model as a multiple group model for couples with and without children assuming measurement invariance (equal loadings and intercepts/thresholds between groups). This model fit the data well, and as a result, we estimated our full model assuming measurement invariance. Finally, we included the covariates and appropriate control variables to build our theoretically proposed structural model (see table 2). The structural model contains five equations: the probability of a first/second birth regressed on non-standard work schedules and relationship quality of both partners and a set of socio-demographic control variables (see “other variables” above); Relationship quality of the (fe)male partner was regressed on non-standard work schedules of both partners; non-standard work of the male partner was regressed on

his work hours; and non-standard work of the female partner was regressed on her employment status.

In order to test whether the effect of non-standard work schedules on the probability of having a child differed between male and female partners, we placed equality constraints on the corresponding parameters in each group. We assessed whether this more constrained model had a poorer fit with the data by means of a Chi^2 difference test. No decrease in model fit after including the equality constraint indicated that the parameter estimates were not significantly different from each other. This was the case in the group of respondents with one child ($\text{Chi}^2 = 0.39(1)$, n.s.), but not in the childless group ($\text{Chi}^2 = 6.62(1)$, $p < 0.01$). As a result, in our final model the parameter estimates of non-standard work schedules of male and female partners on the probability of a second birth were constrained to be equal.

Qualitative Data

The qualitative data came from a subsample of the NKPS (Mills and Hutter 2007). Interviews took place in 2006 in respondents' homes, and each respondent was interviewed separately. In the first phase, 34 semi-structured individual-level interviews were conducted with couples where at least one respondent was engaged in non-standard schedules at the time of the first NKPS data collection. Each interview lasted around 1.5 hours and was digitally recorded and transcribed verbatim. Respondents were asked detailed questions about employment, disadvantages and advantages of nonstandard schedules, their vision of a good relationship, their own relationship, and family and child interactions. In the second phase of interviews, seven couples were reinterviewed in a series of couple-interaction interviews. Out of 34 individual interviews, we excluded nine respondents from the current analysis: four respondents who already had adult children, were older than 50 years at the interview, and may have had recall problems; four respondents where no partner was interviewed; and one homosexual couple (see appendix 2 for characteristics of the couples in the final sample). The final qualitative sample therefore included 22 individual-level interviews (11 couples) and 7 couple-level interviews (29 interviews in total). The interviews were analyzed and coded using the *Atlas.ti* computer software. Interviews were first read and reread by multiple coders to gain a general understanding of the data. Subsequently, the interviews were coded by first defining general categories that related to the research questions, which allowed us to identify effects of non-standard work related to our causal model and hypotheses. This type of detailed reading allowed us to isolate general themes and narratives that exemplified certain points or associations (Boyatzis 1998; Braun and Clarke 2006).

Results

Descriptive Results

The descriptive statistics of the quantitative sample calculated at wave 1 (see table 1) show that about half of the couples had a child between the two waves of data collection (51 percent first child, 54 percent second child). Couples with and without children differed with respect to the employment status of the female

partner: While only 11 percent of women without children were not employed, the corresponding number among mothers of one child was 31 percent. Also, 71 percent of women without children worked full-time (more than 30 hours per week), compared to 15 percent of mothers with one child. The difference in work hours of the male partners between the two groups was much smaller: Fathers of one child worked only approximately 1.5 hours less per week (42 hours on average) than their childless counterparts. Differences between mothers and women without children were even more evident when comparing these groups by non-standard work schedules. Mothers worked on average 13 percent of their hours at non-standard times or days, compared to 8 percent of women without children. Fathers and childless men did not differ in the proportion of hours they worked at non-standard times or days. No significant differences between parents and childless respondents were found in the mean values of the general occurrence of non-standard work and whether non-standard work times or days were required by the respondents' job. Male respondents scored higher on the sum score of non-standard work, and their jobs required work outside office hours more often. In couples without children, women perceived higher relationship quality on all indicators; this difference was less pronounced among male partners.

When comparing the quantitative and qualitative sample, respondents from the qualitative sample were slightly older, had more children, and worked more often in non-standard schedules (see appendix 2).

Results from Structural Equation Models

The description of the results is organized according to the hypotheses formulated in the theory section and summarized in figure 3 (standardized coefficients and significance levels shown next to paths). The results of the full structural model (all estimated equations) are presented in table 2. We use the quantitative results as a basis for our findings, relying upon the qualitative analyses for supplementary interpretation.

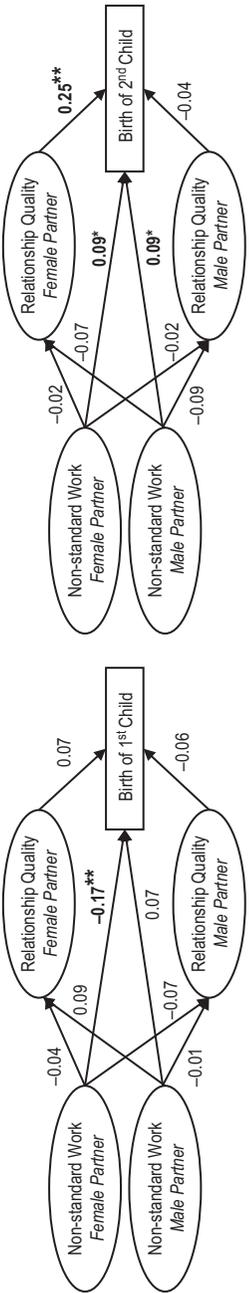
Non-standard schedules and the first and second child

The quantitative results provided support for our first hypothesis, which stated that couples with a female partner in non-standard schedules had a lower probability of having a first child ($t = -2.7, p < 0.01$). With regard to the probability of having a second child, we hypothesized that either partner working in non-standard schedules would result in a higher likelihood to have a second child (hypothesis 3). This expectation gained support from the empirical model, where we found a higher probability of having a second child when male or female partners worked non-standard schedules ($t = 2.0, p < 0.05$).

Relationship quality

In our second hypothesis, we anticipated that the effect of non-standard schedules on fertility might be explained by a negative effect of non-standard work on relationship quality. Or, in other words, couples with lower relationship quality due to their non-standard work schedules would be less likely to have a first child. The

Figure 3. Standardized parameter estimates from Multiple Group Structural Equation Model predicting the birth of a first (left figure) and second child (right figure)



Note: Control variables and correlations of latent variables omitted in figure, see table 2 for estimates. *** $p < .001$ ** $p < .01$ * $p < .05$

empirical results do not provide any support for this mediation hypothesis. Neither did partners' non-standard schedules affect relationship quality, nor was there an effect of either partner's relationship quality on the probability to have a first child. We thus found no evidence for the proposed mediation of the negative effect of the female partner's schedule on the likelihood of a first birth (hypothesis 2). When examining the likelihood of having a second child, we found a higher probability of a second birth when the female partner reported higher relationship quality ($t = 3.6, p < 0.00$), but relationship quality was not affected by non-standard work schedules.

Control variables

Finally, we also examined the weekly working hours as predictor of non-standard work (see table 2). The results show that for men with and without children, a higher number of working hours per week also increased non-standard work schedules. For women, there were opposite effects for mothers and women without children: While women without children who worked more at non-standard times were more likely to work part-time compared to full-time ($t = 2.6, p < 0.01$), the association between part-time work and non-standard work schedules was negative for mothers ($t = -3.3, p < 0.00$). This indicates that these schedules enabled mothers to work more hours and combine paid work and child rearing.

Results from Semi-Structured Interviews

Predictability and desynchronization of schedules

The qualitative interviews helped us further understand and interpret the results of the structural equation models, as they pointed to aspects of non-standard work schedules that were difficult to capture in

Table 2. Parameter Estimates from Multiple Group Structural Equation Model

	Couples without children			Couples with one child		
	B	SE	β	B	SE	β
Dependent: Birth of child^a (T2)						
Non-standard work schedule female ^a	-0.09	(0.04)	-0.17**	0.06	(0.03)	0.09*
Non-standard work schedule male ^a	0.04	(0.04)	0.07	0.06	(0.03)	0.09*
Relationship quality female ^a	0.19	(0.15)	0.07	0.57	(0.16)	0.25***
Relationship quality male ^s	-0.13	(0.14)	-0.06	-0.09	(0.20)	-0.04
Weekly working hours male ^b	0.01	(0.01)	0.11 [†]	0.01	(0.01)	0.08
Female partner no paid job (ref > 30 hours) ^b	-0.71	(0.32)	-0.12	0.01	(0.31)	0.00
Female partner works \leq 30 hours (ref > 30 hours) ^b	0.01	(0.19)	0.00	0.17	(0.25)	0.05
Educational attainment female ^b	0.09	(0.04)	0.14*	0.09	(0.05)	0.13 [†]
Educational attainment male ^b	0.00	(0.04)	0.01	0.15	(0.04)	0.26***
Duration of relationship (years) ^b	-0.07	(0.02)	-0.28***	-0.06	(0.02)	-0.22***
Married (ref = cohabiting) ^b	0.63	(0.15)	0.21***	0.22	(0.20)	0.05
Age female ^b	-0.06	(0.02)	-0.24***	-0.12	(0.02)	-0.41***
Dependent: Relationship quality male^a						
Non-standard work schedule female ^a	-0.02	(0.01)	-0.07	-0.01	(0.02)	-0.02
Non-standard work schedule male ^a	0.00	(0.01)	-0.01	-0.02	(0.02)	-0.09
Dependent: Relationship quality female^a						
Non-standard work schedule female ^a	-0.01	(0.01)	-0.04	-0.02	(0.02)	-0.07
Non-standard work schedule male ^a	0.02	(0.01)	0.09	-0.02	(0.02)	-0.07
Dependent: Non-standard work schedule female^a						

Female partner no paid job (ref > 30 hours) ^b	-2.29	(2.92)	-0.21	-2.16	(3.03)	-0.36
Female partner works ≤ 30 hours (ref > 30 hours) ^b	0.71	(0.27)	0.09**	-1.05	(0.32)	-0.20***
Dependent: Non-standard work schedule male^a						
Weekly working hours male ^b	0.09	(0.01)	0.41***	0.06	(0.02)	0.27***
<i>Covariance of latent variables</i>						
NS work female ↔ NS work male	0.74	(0.21)	0.20***	0.74	(0.27)	0.18***
Relationship quality female ↔ Relationship quality male	0.10	(0.01)	0.42***	0.16	(0.02)	0.52***
N	416			303		
Model fit:						
$\chi^2(86)$				1,596.15***		
CFI				0.96		
TLI				0.97		
RMSEA				0.04		

Source: NKPS wave 1 and 2, calculations by authors.

Note: NS: Non-standard.

^aEndogenous.

^bExogenous.

*** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .1$

the quantitative data. One of these aspects was the fact that among the respondents of the semi-structured interview, non-standard work schedules were viewed as an inherent part of their job or occupation, for instance in healthcare, and also as a source of extra income. At the same time, work schedules, jobs, and working hours appeared to be constantly in flux within couples. The interviews were held between the two waves of the quantitative data collection (which were three years apart), and in a number of cases, the work situation of one of the partners had already changed since the first wave of data collection. Particularly the female respondents adapted their work situation to family responsibilities and age of the children. Practically all women had worked full-time (or nearly full-time) before they had children, and these women and their partners recalled very high degrees of desynchronization (e.g., one partner working night shifts while the other had a regular full-time day job). However, these situations were viewed as transient and subject to change, when desired and certainly after the birth of a child.

One full-time working couple without children where the female partner was engaged in very irregular non-standard hours described that they rarely physically saw each other at home and since their time off work did not overlap, they resorted to writing notes or leaving messages on the answering machine for communication. The female partner repeatedly stressed that her job would not be suitable for having children. Nevertheless, since both partners did not desire to have children and valued a high degree of autonomy in their relationship, they both independently evaluated their working hours and relationship positively. Other couples discussed comparable accounts of desynchronization in the past before they had children, indicating that they adapted the situation once it did not fit their lives anymore. Children or childbearing plans provided a valid reason to reduce the number of working hours (especially for women) or to look for a different job. When we related this to the negative effect of women's non-standard work on a first birth, this could be interpreted as a result of self-selection. In other words, women who did not want to have children were more likely to work non-standard schedules, while those who saw an incongruity with their childbearing plans actively changed their job situation.

We tested this notion in the quantitative model by including an assessment of the intention to have a child within the next three years (measured at wave 1) in the equation predicting work in non-standard schedules (results available on request). The results showed a strong negative effect of intending to have a child on working non-standard times or days, but only for women without children. In this model, the effect of non-standard work on the probability to have a first child was reduced ($t = -1.9$, $p < 0.06$). This additional analysis supported our interpretation of the qualitative data that women attempted to select themselves into employment that matched their family needs, and if necessary, changed their hours or even withdrew from paid employment. Indeed, some form of schedule change as a response to the family situation was present for virtually all couples, indicating considerably more interaction between family and work life than we were able to model in our quantitative approach.

Another important determinant of the compatibility of non-standard work schedules with family life suggested by the qualitative data was the *predictability*

of the work schedule. Friction between home and work existed when time together could not be planned and particularly when young children were involved; unpredictable schedules posed a greater problem than non-standard work schedules. This was especially the case when formal childcare was used, which in the Netherlands generally requires parents to enroll their children for fixed days. When schedules were unpredictable, both parents might be at home but still would have to get up in the morning and bring the children to the childcare facility. Predictable non-standard work schedules, on the other hand, were often positively evaluated.

Interviewer: “[...] You refer to positive things [of non-standard work schedules], but do you think that it also has a negative effect on the family?”

Male partner: “No, I couldn’t think of something.”

Female partner: “On the family? No, I am thinking, is there something negative... Maybe if it were very irregular. But you actually work *regular irregular* schedules.”

(Couple 1: Male partner works alternating shifts, female partner does not work, two children)

Especially for the arrangement of childcare, the predictability of the schedules was crucial, as it allowed parents to desynchronize their schedules without having to reorganize on short notice. We anticipated that an important determinant of this desynchronization would be the cultural norm in the Netherlands that prescribes care by the parents as preferable to formal care. The motive to increase desynchronization in order to always have a parent at home was ubiquitous in the qualitative data:

Female partner: “[If you both work at the same time] You need formal care, you name it, the whole organization. Well, this is not how we want it. We wanted to raise the children together, with as little outside care as possible.”

(Couple 11: Male partner used to work irregular hours but works now regular full-time (32 h/week), female partner works irregular hours (20 h/week), three children)

Female partner: “I thought to myself, yes, okay, we really wanted kids, then you are responsible for taking care for them yourself.”

(Couple 7: Male partner works full-time regular hours, female partners switched recently from irregular to regular, two children)

In fact, one of the main reasons for women to work evening and night shifts was to be home for the children during the day, and often they planned to go back to regular work schedules once the children were older. Mothers had the feeling that even when they were asleep in the bedroom during the day after working a night shift and the children were cared for by somebody else, they were still present in the home.

Fathers' role

In line with our theoretical expectation, the quantitative results showed a higher probability of having a second child in couples where the male or female partner worked a non-standard schedule. This positive effect we attributed partly to the higher involvement of fathers in childcare when one of the partners works non-standard schedules. In the qualitative interviews, fathers who worked non-standard times or days and their partners stated that these fathers were around more often during the day, which enabled them to spend more time with their children and do things “normal (Dutch) fathers” do not often do, such as picking the children up from school. In this sense, non-standard schedules not only afforded more time, but actually enabled fathers to adopt a different role within the family. A shared perception among fathers in the qualitative sample who worked non-standard hours was that they knew more about the daily lives of their children. This is echoed in the words of a father who worked alternating shifts and was therefore often at home during the day:

“In fact, you only spend the weekend with the children [if you have a ‘9 to 5’ job]. Maybe you see them briefly in the evening, but that’s actually not enough time to know what has really happened that day.”

(Couple 1: Male partner works alternating shifts, female partner does not work, two children)

The partners of men who worked at non-standard times also reported that these men “*are more a part of the family*” (female partner, couple 1) because they were around more. That this extended role of the father was also perceived as positive by the outside world was illustrated by the words of a male police officer who worked in non-standard schedules his entire career and recalled the time when his children were young:

“Other mothers used to be jealous that I would bring the children to school all the time, going: ‘How is that possible?’ Well, this is one of the advantages of the irregularity.”

(Couple 4: Male partner works full-time irregular hours, female partner does not work, three children)

Relationship quality

The qualitative interviews concurred that there were no perceived negative effects of non-standard schedules on relationship quality. While couples were strongly aware of the consequences these work schedules had for their social life, stating that working non-standard schedules often meant missing out on family events, birthday parties or clubs, and other forms of organized leisure activities, they generally did not perceive these schedules as affecting their relationship quality. One reason for this could of course be a “survivor bias” in the sense that couples who experienced a negative impact of non-standard work schedules on their relationship might choose to opt out of these schedules rather than seeing their

relationship suffer. There was evidence of self-selection out of non-standard work especially among women, where several stated that they would consider stopping work altogether if it affected their children or the relationship negatively. Couples also stated that they continued to work desynchronized hours as long as it worked out well for the family. Some female respondents described non-standard work as an active strategy to remain in paid work but also be present at home.

Female partner: "... I could not do it without work. No, you couldn't put me here for 7 days a week, here in the house with only the kids. I'd go insane. People sometimes say to me that 'Gee, you have children and still you work 27 hours!' [Both laugh.] Then I think: 'Yes, but I am a nice mom when I am there. I'd just be really grumpy if I didn't work.'"

(Couple 8: Male partner studies and works irregular, female partners switched recently from irregular to regular, two children)

Female partner: "Four walls and one or two kids [laughs], that's not always enough to make you happy."

(Couple 9: Male partner works full-time regular hours, female partner works irregular hours, 24 h/week, four children)

It is important to note that for all families we interviewed, the compatibility of work and family life hinged on one of the partners (usually the female) working part-time or not working at all. This meant that the desynchronization of schedules, which was in most cases actively sought to arrange childcare, did not impact family life or the couple relationship negatively because of the limited number of non-overlapping hours (see also Mills and Täht [2010]). Respondents were also aware of this, and a situation where both partners work full-time, whether at non-standard or regular times, was not seen as desirable. This was likewise grounded in the strong acceptance of part-time work in the Netherlands.

Discussion

The aim of the present study was to explore whether and how employment in non-standard schedules affects the probability of having a child. For couples without children, we expected and found a lower likelihood of having a first child when the female partner worked non-standard schedules. Relying also on qualitative evidence, we interpreted this result as a selection effect of women who did not plan to have children at this time in their life. We were able to confirm this interpretation by conducting an additional analysis. This analysis showed that the negative effect of these schedules on having a first child could be largely explained by the intention to have a child.

For parents of one child, we expected a higher probability of having a second child when either partner was engaged in work in non-standard schedules, which was supported by our empirical results, where we found a positive effect of non-standard work on the probability of the birth of a second child for male and female partners. Moreover, this finding was confirmed by the clear accounts

of a more extensive role of fathers in the qualitative interviews and the desire of these parents to take care of their children rather than making use of formal childcare (Portegijs et al. 2006). This preference in the Netherlands is the result of a tradition of low female labor-force participation and a strong emphasis on the superiority of maternal care (Clerkx and Van IJzendoorn 1992), as well as the shortage of formal childcare facilities and lack of paid parental leave. This makes the Netherlands a “familialistic” welfare state when it comes to childcare policy (Haas 2005; Leitner 2003), a system in which “households must carry the principal responsibility for their members’ welfare” (Esping-Andersen 1999, 51). In this sense, including the institutional context explicitly in our theoretical expectations and the interpretation of the results provided an important explanatory framework. This is also evident when we consider the strong part-time work culture of women in the Netherlands. Dutch mothers are generally able to decrease their paid work to increase work-family compatibility. The flexibility to adjust working hours to fit care responsibilities is guaranteed by law in the Netherlands, which grants employees a high degree of control about the number of hours and times they work. It is important to note, however, that the recent economic recession has strongly increased the already high prevalence of temporary and flexible work⁴ in the Netherlands. These developments imply that a smaller group of people will be eligible for these policies. Soaring unemployment numbers mean that many employees might now be more reluctant to request a schedule change or work-time reduction from their employer. This is comparable to the situation in other European countries such as the United Kingdom, where regulations to provide work-time flexibility are in place but employers can dismiss employees requests relatively easily (Lewis and Campbell 2007).

We also explicitly connected our theoretical model to the large body of literature that has examined non-standard work schedules with respect to relationship functioning and relationship quality (Mills and Täht 2010; Presser 2000; Schulz et al. 2004; White and Keith 1990). We tested whether non-standard times would lead to worse relationship quality and how far this would lower the probability of having a child. However, our empirical results showed no evidence for a relation between non-standard work schedules and relationship quality, which was surprising given the evidence from previous research. We attribute the absence of an effect to the Dutch institutional context, where workers are generally better protected and often have the opportunity to opt out of non-standard work schedules if these do not fit in with the organization of family life (Mills and Täht 2010). The qualitative interviews also illustrated that couples did not perceive their schedules to affect their relationship quality. Those couples who foresaw a negative impact on their home life had actively looked for different jobs or found a way to avoid the most straining circumstances, for instance by discontinuing their work on the night shift. In this way, the qualitative interviews fruitfully complemented our empirical findings.

More generally, the in-depth approach we adopted, in which we combined quantitative longitudinal analysis with qualitative information collected among a subsample of the representative sample, enabled us to gain insights into the subtle and dynamic ways non-standard work influenced family life and further

deepened and extended our conclusions from the quantitative analysis. The qualitative data enabled us to make sense of some of our quantitative findings, particularly with regard to the fluidity of schedules and the ways couples and families adapted their family life to their work. Since all of the qualitative interviews involved at least one partner with non-standard work hours, we did not have any qualitative accounts of couples with regular work hours. This is a limitation of the qualitative part of the study, and examining this further with a more extensive sample of respondents would be desirable.

Inevitably, this study also suffered from limitations related to the quantitative data and analysis. The relatively low sample size implies that statistical power might have been insufficient to detect small effects. Furthermore, a direct measure of schedule coordination among partners would be desirable. Unfortunately, our data did not provide such information. A major shortcoming was that we did not have information about the timing of schedule change between the waves of data collection and thus were unable to examine schedule adaptation in response to a birth. Another limitation of our quantitative data source was that it did not provide information about the predictability of schedules. In the qualitative data, this was one of the most important aspects for families to reconcile the work schedules of both partners.

With these limitations in mind, we nonetheless believe that this study provided an innovative operationalization of non-standard work by using structural equation models and allowed us to model the direct and indirect effects of these schedules on fertility. This strategy made optimal use of the available information. While all our indicators come with inherent problems in terms of their reliability and scope, we believe that we can adequately measure the intensity of non-standard work by combining them in a model that allowed us to also include measurement error. This of course comes at the cost of not being able to define a clear cutoff point of when a work schedule is non-standard. It also makes our study less comparable to previous research, which more often used a categorized definition of the most common schedule in the current job (i.e., most hours of most days worked outside 8 am and 4 pm; see [Presser \[2003\]](#)), which is a limitation that we acknowledge. However, we would like to relate our measurement to a recent call by [Dunifon et al. \(2013\)](#) for measurements of non-standard work schedules that take the complexity and multiplicity of these schedules more into account. The authors concluded that “dichotomizing workers into those who work standard vs. nonstandard jobs does not accurately reflect women’s actual experiences” and that more qualitative work is needed “in order to shed light on the complexities of work schedules in families with young children” ([Dunifon et al. 2013](#), 531).

We believe that this study provided several new insights and indications for additional fruitful lines of research into conditions of employment and fertility. Specifically, we have shown that the impact of non-standard schedules is highly context dependent. We found no evidence that these schedules worked by either partner discourage continued childbearing in a context where working hours can be adjusted to fit the needs of the family. For mothers, these schedules might even decrease the indirect costs of a second birth by enabling them to combine paid work with child rearing and engaging the father more in childcare. This

conclusion is particularly relevant with regard to recent efforts at the national and European level to increase the labor-force participation of young mothers while increasing fertility rates (European Commission 2010).

Notes

1. For night-shift workers (anyone working ≥ 1 hour between 0 and 6 am), the average number of permitted weekly working hours is 40 per 16 weeks and the maximum number of night shifts allowed for this period is 36.
2. *Carriero, Ghysels, and Van Klaveren (2009)* report that 62 percent of men and 56 percent of women could work flexibly in the Dutch sample, which is about 10 percent more compared to, for instance, Italian men and women. In our own sample of 742 couples, 72 percent of men and 65 percent of women report to have at least some control about their schedules, while the percentage with quite much or full control is 41 percent among men and 35 percent of women.
3. Additional analyses of the probability of attrition and relationship dissolution between waves of data collection showed that respondents in the analytical sample had better relationship quality and were more likely to intend to have a child compared to those who dropped out or ended their relationship between waves. No statistically significant differences with regard to the indicators of non-standard work times were found, and the amount of variance explained was low; 2 percent of variance in attrition and 8 percent of variance in relationship dissolution were explained by the combination of relationship quality, the intention to have a child in the next three years, and the indicators of non-standard work times. Results are available upon request.
4. There is, for instance, a strong increase in so-called “zero-hours contracts” in many sectors such as healthcare and hospitality, where employees are on standby without knowing how many hours and when they will work each month.

Appendix 1. Unstandardized and Standardized Factor Loadings, Residual Variances, and Significance Levels of Measurement Model

	Whole sample			No children			One child		
	Loading	Std. loading		Loading	Std. loading		Loading	Std. loading	
Non-standard (NS) work female partner (F1)									
NS work sum score	1.00	0.91	NA	1.00	0.88	NA	1.00	0.98	NA
Proportion NS hours	0.07	0.80	***	0.07	0.82	***	0.07	0.73	***
NS work required	0.40	0.83	***	0.38	0.76	***	0.38	0.86	***
Non-standard (NS) work male partner (F2)									
NS work sum score	1.00	0.82	NA	1.00	0.83	NA	1.00	0.84	NA
Proportion NS hours	0.05	0.72	***	0.05	0.73	***	0.05	0.73	***
NS work required	0.41	0.85	***	0.39	0.84	***	0.39	0.82	***
Relationship quality female partner (F3)									
Relationship good	1.00	0.93	NA	1.00	0.89	NA	1.00	0.94	NA
Relationship happy	0.96	0.88	***	0.96	0.86	***	0.96	0.89	***
Relationship strong	0.95	0.87	***	0.96	0.84	***	0.96	0.88	***
Relationship stable	1.07	0.85	***	1.12	0.81	***	1.12	0.94	***
Relationship quality male partner (F4)									
Relationship good	1.00	0.90	NA	1.00	0.90	NA	1.00	0.91	NA
Relationship happy	1.00	0.90	***	0.95	0.87	***	0.95	0.85	***
Relationship strong	0.90	0.81	***	0.92	0.82	***	0.92	0.85	***
Relationship stable	1.09	0.90	***	1.10	0.94	***	1.10	0.89	***

(Continued)

Appendix 1. *continued*

	Whole sample			No children			One child		
	Loading	Std. loading		Loading	Std. loading		Loading	Std. loading	
Covariance of latent variables									
F1 ↔ F2	0.87	0.20	***	0.91	0.21	***	0.90	0.19	**
F1 ↔ F3	-0.04	-0.04		-0.02	-0.02		-0.08	-0.06	
F2 ↔ F3	0.01	0.00		0.08	0.09		-0.12	-0.10	
F4 ↔ F1	-0.05	-0.04		-0.08	-0.08		-0.03	-0.02	
F4 ↔ F2	-0.06	-0.05		-0.05	-0.05		-0.09	-0.08	
F4 ↔ F3	0.14	0.50	***	0.10	0.42	***	0.18	0.54	***
Residual variances									
NS work sum score	0.90	0.17	***	1.16	0.22	***	0.17	0.03	
Proportion NS hours	0.01	0.37	***	0.01	0.33	***	0.02	0.47	***
NS work required									
NS work sum score	2.09	0.32	***	2.07	0.31	***	1.82	0.30	***
Proportion NS hours	0.01	0.48	***	0.01	0.47	***	0.01	0.47	***
NS work required									
Relationship good	0.05	0.14	***	0.06	0.21	***	0.05	0.13	***
Relationship happy	0.08	0.22	***	0.07	0.26	***	0.09	0.21	***
Relationship strong	0.09	0.25	***	0.08	0.29	***	0.10	0.23	***
Relationship stable	0.12	0.27	***	0.14	0.35	***	0.05	0.11	*
Relationship good	0.07	0.19	***	0.07	0.19	***	0.06	0.17	***
Relationship happy	0.07	0.19	***	0.08	0.24	***	0.11	0.28	***

Relationship strong	0.12	0.34	***	0.11	0.33	***	0.10	0.27	***
Relationship stable	0.08	0.18	***	0.04	0.12	***	0.10	0.21	***
<i>Model fit</i>									
χ^2 (df)	46.23	(19)	***				82.45(41)	****	
CFI	0.98						0.97		
TLI	0.99						0.98		
RMSEA	0.04						0.05		
N	742			432				310	

Source: NKPS wave 1, calculations by authors.

Note: NA: Non-standardized loadings are set up to be 1 for model identification, and no significance tests are conducted.
 *** $p < .001$ ** $p < .01$ * $p < .05$

Appendix 2. Characteristics of Respondents of Qualitative Interviews Recorded at First Wave of Data Collection

Couple	1	2	3	4	5	6	7	8	9	10	11
Sex main respondent	M	F	F	M	M	M	F	F	F	F	F
Children in household	2	2	0	3	2	2	2	1	4	3	2
Birth of child between T1 and T2 (1 = yes)	0	0	0	0	0	0	1	1	0	0	1
Married (1 = yes)	1	1	0	1	1	1	1	0	1	1	1
Age female partner	36	37	31	44	38	45	38	33	40	35	34
Educational attainment female partner (1–10)	8	8	8	3	4	8	7	7	5	8	8
Educational attainment male partner (1–10)	7	8	7	7	4	7	7	4	8	7	7
Weekly working hours female partner	^a 20	32	32	^a	^a 20	16	38	24	22	22	^a
Weekly working hours male partner	38	32	40	38	34	42	65	32	50	40	24
Proportion of NS hours female partner	^a 0.63	0	^a	^a	0	0.83	0.62	0.47	0.42	0.42	^a
Proportion of NS hours male partner	0	0.03	0.09	0.49	0.56	0.52	0.14	^b 0.07	0	0	^b
Sum score on questions NS work female partner (3 to 12)	^a 10	10	11	^a	^a 4	9	9	9	9	10	^a
Sum score on questions NS work male partner (3 to 12)	9	6	7	12	12	9	9	11	5	3	^b
NS work required female partner (1 = yes)	^a 1	1	1	^a	^a 1	1	1	1	1	1	^a
NS work required male partner (1 = yes)	1	0	1	1	1	1	1	1	0	0	^b

Source: NKPS wave 1 and 2 and NKPS Minipanel, calculations by authors.

^aFemale partner not in paid work.

^bMissing information. NS = non-standard.

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