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The Impact of Changes in Family Structure on Individuals' Financial Risk Attitudes

A longitudinal analysis from the Netherlands

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Abstract

Risk attitudes influence a wide range of financial decisions in the household, such as investments, consumption, and savings. It is, therefore, crucial to understand risk attitudes and how they change throughout the life cycle, in order to determine and predict economic behavior. In this study, we investigate the impact of changes in family structure on individuals' financial risk attitudes by using longitudinal data from De Nederlandsche Bank Household Survey, DHS. The data set consists of individuals from the Netherlands and is stretching over the time period from 1993 to 2021. The family transitions considered in this study are getting married, forming a domestic partnership, entering parenthood, children leaving the household, getting divorced, separating from a partner, and entering widowhood. Fixed effects regressions are conducted to estimate the effect of these life events on financial risk attitudes. Some of the studied life events show a significant impact on individuals' risk attitudes. More precisely, we find that getting divorced and entering widowhood are associated with a decrease in financial risk aversion among men. Similar results are found when an individual is separating from a partner. This negative effect is most pronounced among women. The sensitivity analysis, however, shows no significant effects. Consequently, we cannot conclude that there are any changes in risk attitude when an individual experiences a certain life event.

Key words: *risk attitude, family structure, panel data, Netherlands*

Contents

1 Introduction

One of the key determinants of economic behavior is risk preferences. Risk preferences play an important role in many economic decisions such as savings, investments, and consumption. Thus, understanding risk preferences and how they change throughout the life cycle is crucial in order to understand and predict economic behavior. From a historical perspective, these preferences have been seen as stable across time and state-space (Stigler & Becker 1977). However, recent empirical research has found that risk preferences might not remain stable throughout the life cycle and can be subject to change due to macro shocks, such as financial crises (Malmendier & Nagel 2011, Guiso, Sapienza & Zingales 2018), natural disasters (Cameron & Shah 2015, Said, Afzal & Turner 2015, Hanaoka, Shigeoka & Watanabe 2018) or civil conflicts (Voors, Nillesen, Verwimp, Bulte, Lensink & Van Soest 2010). As of yet, few studies have investigated individual-specific life events' impact on risk preferences, and findings of their effects are still inconclusive. Getting married, entering parenthood, getting divorced, or losing a life partner, are only a few examples of individual-specific life events that might affect an individual's risk preferences.

Over the past fifty years, families have significantly shifted in terms of structure across Europe (Oláh 2015). Since the 1960s, marriage rates have declined by half in the European Union (from 0,80 % in 1964 to 0,43 % in 2019), whilst divorce rates have more than doubled (from 0,08 % in 1964 to 0,18 % in 2019) (Eurostat 2022). Individuals are also marrying later in life and the prevalence of cohabitation is widespread (Ortiz-Ospina & Roser 2020). Hand in hand with declines in marriage rates, fertility rates are at a record low and have fallen below the replacement levels in Europe (Oláh 2015). Thus, these demographic trends have led to sharp changes in family structures.

There is a vast amount of literature that has investigated the change in family structure on general willingness to take risks. For example, previous studies have demonstrated that married individuals are more risk averse compared to their unmarried counterpart (Jianakoplos & Bernasek 1998, Lin 2009, Halek & Eisenhauer 2001). Entering parenthood has shown to increase both men's and women's willingness to take risks (Görlitz & Tamm 2015). Furthermore, separating from a partner is associated with a higher willingness to take risks (Browne, Jäger, Richter & Steinorth 2022). Some studies have shown that widows and widowers have a higher general risk aversion compared to single individuals

(Dohmen, Falk, Huffman, Sunde, Schupp & Wagner 2011).

When investigating individuals' risk attitudes, it is important to differentiate between general risk-taking and domain-specific risk-taking. Apart from general risk, there are mainly five specific risk domains in which research has been conducted: financial, health/safety, recreational, ethics, and social. (Weber, Blais & Betz 2002). How these domain-specific risk measures relate to the measure of general risk-taking is still unclear. Recent studies have shown that domain-specific questions produce measures that are stronger for a particular context (Dohmen et al. 2011, Hanoch et al. 2006). Since we are interested in understanding the fundamental determinants of economic decisions, we have chosen to extend the literature on financial risk-taking.

The life events considered in this study can be divided into three subgroups: desirable, undesirable, and neutral life events. Desirable life events comprise of getting married, forming a domestic partnership, and entering parenthood. Undesirable life events consist of getting divorced, separating from a partner, and becoming widowed. Life events that can be considered neutral are first and last child leaving home. All of the studied life events have a high rank on the so-called social readjustment rating scale (SRRS). The SRRS identifies major stressful life events and measures to what degree these life events impact individuals' stress levels. To summarize, the overall aim of this study is to analyze the impact of changes in family structure on individuals' financial risk attitudes.

In this study we will utilize panel data from De Nederlandsche Bank Household Survey (DHS), spanning from 1993 to 2021. By using data from six different self-assessed questions about financial risk attitudes, an index will be constructed using a principal component analysis. In order to investigate the link between changes in family structure and financial risk attitudes, a fixed effects model will be applied.

Our study contributes to the existing literature in three main ways. Firstly, previous studies based on panel data have mainly assessed general willingness to take risks and not financial risk-taking. Thus, it is still unclear whether individuals' financial risk attitudes change over time as it is influenced by major life events. Secondly, we are extending previous research by examining a comprehensive data set, spanning over almost 30 years. Thirdly, most previous studies have focused on only some of these life events, whereas, to our knowledge, we are the first to include all of these family transitions in the same paper. In addition to investigating the entire sample, women and men will be investigated

separately since there is strong evidence for gender differences in financial risk-taking (Dohmen et al. 2011, Charness & Gneezy 2012, Eckel & Grossman 2008).

We find evidence of associations between changes in financial risk attitude and three of the studied life events. More precisely, we find that getting divorced and entering widowhood is associated with a decrease in financial risk attitude among men. Similar results are found when an individual is separating from a partner. This negative effect is most pronounced among women. However, the sensitivity analysis conducted showed no statistically significant difference in risk attitudes when an individual experiences any of the eight life events. Taken together, we cannot conclude that there are any changes in risk attitude when an individual experiences a certain life event.

The remainder of this paper is organized as follows. The theoretical framework and previous literature are presented in section two. The data is included in section three, while the fourth section presents the methodological framework. The results are found in section five, and the analyses are presented in section six. The findings of this paper are discussed in section seven and the last section concludes the paper.

2 Background

2.1 Theoretical Frameworks

Changes in family structure may impact individuals in several ways. The main focus of this paper is however to examine whether a particular life event affects an individual's risk attitude. These life events comprise of getting married, forming a domestic partnership, entering parenthood, first child leaving home, last child leaving home, getting divorced, separating from a partner, and entering widowhood. Depending on which theoretical framework that is applied, different predictions can be made for each family transition. The three main theoretical frameworks that will be introduced in this section are: gains from marriage explained from a family economic perspective, the prospect theory combined with the family development theory, and the mood maintenance hypothesis.

2.1.1 Gains from Marriage from a Family Economic Perspective

Becker's (1973) seminal "A theory of marriage", introduced the idea that marriage is a partnership with the aim of joint production and joint consumption. The economic benefits from marriage are given by economies of scale, risk-sharing, specialization, and sharing of non-rival goods (Browning et al. 2011). Through economies of scale, the married couple can benefit from economic advantages due to shared living expenses and tax benefits.[1] Furthermore, the risk-sharing mechanism implies that the spouses can smooth their consumption through voluntary transfers, which in turn might not only improve the economic well-being for the married couple, but it can also allow the spouses to engage in more riskier financial activities (Browning et al. 2011). An unmarried cohabitant couple on the other hand, might be considered as a less stable arrangement compared to a married couple (Lerman 2002). It is therefore uncertain whether the risk-sharing mechanism also applies to unmarried partners.[2]

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[1] In the Netherlands, a married couple is considered as so-called tax partners. Tax partners can divide certain income and tax allowances between them on the tax return (Business.gov.nl 2022*b*).

[2] Naturally, there is not always a need of getting married in order to benefit from economies of scale or to pool risks (Browning et al. 2011).

2.1.2 Prospect Theory and Family Development Theory

Prospect theory

One of the most prominent theory which tries to describe individuals' decision-making under risk is the prospect theory. This theory was first introduced in 1979 by Amos Tversky and Daniel Kahneman, who further developed the idea in 1992. In contrast to the expected utility theory, the prospect theory is based on the idea that individuals value losses and gains differently, and where perceived losses are more important than gains of the same amount (Kahneman 1979, Tversky & Kahneman 1992). Furthermore, Tversky & Kahneman (1992) state that when an individual is presented with two options offering the same outcome, the individual will choose the option offering perceived gains. Moreover, the prospect theory demonstrates that individuals think in terms of expected utility relative to a reference point (e.g. current wealth, or current asset position), and not in terms of absolute outcomes (Kahneman 1979, Tversky & Kahneman 1992). The reference point determines how an outcome is perceived, and an increase in wealth (i.e. increase in the reference point) is associated with an increase in financial risk tolerance (Chaulk, Johnson & Bulcroft 2003).[3]

Family development theory

The family development theory, introduced by White (1991), assumes that families are embedded in kinship structures and that family relations are determined through the positions in this structure. Gender, marriage, and generational relations define a position in the kinship structure, where basic positions are husband, wife, mother, father, son and, daughter (White, Martin & Adamsons 2018). Furthermore, there are norms and social expectations in the society (i.e., social rules) that govern group- and individual behavior. All norms attached to one of the kinship positions are defined as a role (White et al. 2018). The role of a mother, for example, entails the norm and expectation of nurturing the child. Roles may also change as individuals age. For instance, the nurturant role for a mother with a young child might not be the same as for a mother with an adolescent child. Furthermore, structure, roles, and expectations within the family may change as the family moves through different stages. These stages are normally initiated by a

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[3]Risk tolerance is the inverse of risk aversion, and which measures the level of risk an individual is willing to bear (Browning et al. 2011).

particular life event, such as marriage, birth, death, etc. For example, when a couple enters new roles as a mother and a father, they become subject to a new set of societal expectations.

Combining prospect theory and family development theory

As described by Chaulk et al. (2003), the prospect theory and the family development theory can be combined in order to understand how individuals' subjective financial risk tolerance is affected by changes in family structure. The linkage between the two theories lies in the assumption about role expectations in the family development theory and the reference point in the prospect theory.

Although Kahneman (1979) states that gains and losses are defined by the amounts of money that are obtained when a prospect is played (relative to a reference point), they suggest that "[...] there are situations in which gains and losses are coded relative to an expectation or inspirational level." (p. 286). Stated differently, changes in expectations can induce a shift in the reference point away from the status quo. This can in turn alter the preference order of outcomes, and where losses might loom larger than gains. These expectations and inspirational levels can be linked to the family development theory. As mentioned above, there are role expectations operating on each family member. When the family moves through different stages, a new family structure will occur and consequently also new roles (entailing new expectations). The new expectations on a family member might therefore cause a change in his/her reference point, which in turn can alter the preference order for prospects (as for example assessing potential gains and losses in risky investments). Thus, entering new roles (as for example becoming husband/wife, parent etc.), will alter the social meaningfulness of any economic gain or loss (Chaulk et al. 2003).

2.1.3 Mood Maintenance Hypothesis

In standard economic models, individuals are assumed to have stable risk preferences. These models also assume that individuals take into account all available historical data when they are forming beliefs about risky outcomes. The psychological literature on the other hand argues that an individual's experiences can affect personal decisions to a greater extent compared to historical data. General mood (or emotions) is also a

factor that might affect an individual's decision-making process involving risks. A well-known hypothesis trying to explain the role of emotions on risk-taking behavior is the mood maintenance hypothesis. The main idea behind the hypothesis is that individuals experiencing a state of positive affects are less likely to participate in risk-taking activities compared to individuals in a neutral affective state (Isen & Patrick 1983, Nygren, Isen, Taylor & Dulin 1996, Hermalin & Isen 2000). Individuals being in a positive mood, therefore, want to avoid actions that might lead to negative consequences that could ruin their current state of happiness. Contrariwise, people in a negative mood state tend to engage in riskier behaviors in order to improve their mood (Lerner & Keltner 2000, Raghunathan & Pham 1999). Imposing the assumption that monetary gains (losses) make individuals happier (less happy), the mood maintenance hypothesis can be connected to the prospect theory's reflection effect (Browne et al. 2022), i.e., that people tend to be risk averse for gains and risk seeking for losses.

2.1.4 Predictions from the Theory

Getting married and forming a domestic partnership

Family economics emphasizes the idea that marriage provides economic benefits such as economies of scale and risk-pooling. This will in turn lead to higher wealth levels and consequently also an increase in the couple's financial risk tolerance. Furthermore, the risk-sharing mechanism might allow the spouses to invest in higher risk-return activities (Browning et al. 2011). The underlying reason for this is that marriage brings a greater financial stability, which in turn allows the couple to more easily plan and make investments that might pay off in the long-run (Browning et al. 2011). An unmarried cohabitant couple will also benefit from economies of scale, which in turn is expected to increase the partners' risk tolerance. However, it is uncertain whether they will benefit from the risk-sharing mechanism since domestic partnership can be considered as a less stable arrangement compared to marriage (Browning et al. 2011).

The family development and prospect theory contradicts the predictions from the family economic theory, where marriage (or forming a domestic partnership) instead is expected to decrease the individuals' financial risk tolerance. This behavior can be explained by the greater need for wealth protection for future consumption in order to fulfill social roles and accomplish eventual goals, such as having children (Chaulk et al.

2003).

The mood maintenance hypothesis would argue that desirable changes in family structure, such as getting married or forming a domestic partnership, will decrease the financial risk tolerance. By abstaining from risk-taking behavior, the couple may therefore be able to maintain the positive mood state caused by desirable life events.

Entering parenthood

Within the framework of family economics, the risk-sharing mechanism will not be affected when the married couple becomes parents. However, since children increases the economic expenses, the parents' discretionary income will decrease. Thus, entering parenthood is expected to decrease the parents' financial risk tolerance.

Within the framework of family development and prospect theory, having a child is associated with lower levels of risk tolerance due to societal expectations of being a responsible parent and providing (economic) security to the child. Thus, experiencing any financial loss might threaten the parents' possibility of giving the child an advantageous childhood. Financial losses will consequently have a greater influence compared to financial gains, and the parents will rather choose a certain outcome than an uncertain one when confronted with a financial decision. Furthermore, the role expectations of a mother and a father are presumed to be somewhat different from each other. According to the family development theory, women are assumed to have the protector role and men the provider role (Chaulk et al. 2003). In order to make sure that the father will meet the societal expectations of being the family provider and secure financial support for the family, men will have a greater reduction in risk tolerance compared to women.

According to the mood maintenance hypothesis, entering parenthood can be considered a desirable life event and would therefore be expected to decrease the individual's financial risk tolerance.

Children leaving home

According to family economics, children leaving home will increase the parents' discretionary income, which in turn is expected to increase the parents' financial risk tolerance.

Within the framework of family development and prospect theory, the effect on the parents' financial risk tolerance when a child leaves the household will depend on whether

the child is the last one moving out or not. If there is still at least one child left in the household, the parents' financial risk tolerance is not expected to change. The argument for this is that the parents still need to adequately fulfill their parental roles of caregivers and are expected to provide (financial) security to the remaining child in the household. When the last child leaves the household, the financial risk tolerance of the parents is therefore predicted to increase. Although they still have the role as parents, they are not expected to follow certain norms anymore, such as providing (financial) security or nourishing the children. Thus, unexpected financial losses will not strain the resources needed to adequately fulfill their parental roles anymore. The parents might therefore increase their risk tolerance as the last child moves out.

In accordance with the mood maintenance hypothesis, neutral changes in family structure (i.e. the first and last child leaving home), are not expected to change the individual's financial risk tolerance.

Getting divorced, separating from a partner and entering widowhood

Within the family economy framework, getting divorced (or entering widowhood) will bring the risk-sharing mechanism to an end (assuming no income transfers between the divorced spouses). The same thing applies to the economic gains obtained from economies of scale, which would lead to lower levels of wealth. The individuals' financial risk tolerance is therefore expected to decrease. When an unmarried couple is separating, decreasing levels of wealth is expected to result in a decline in financial risk tolerance.

Applying the family development and the prospect theory, the impact of a divorce (or separation from a partner) on an individual's risk tolerance will depend on whether the couple has dependent children or not. For example, if a childless couple gets divorced, the financial risk tolerance of both the husband and wife is expected to increase. The reason for this is that single individuals have fewer roles to perform compared to married individuals (White et al. 2018). To concretize, if a single individual experiences a financial loss due to investments in risky assets, he or she will most likely only suffer from a loss in income and not the loss of a relationship. A divorced couple without any children is therefore expected to have a higher level of financial risk tolerance compared to their married counterparts. If the couple has dependent children, the prediction will be somewhat different. The divorce is in this case not expected to increase the risk tolerance of

the newly divorced couple. An explanation to this behavior would be that the husband and wife do not lose the parental role when they get divorced and are still expected to be a responsible caregiver to their children. The same reasoning can be applied to an individual becoming widowed, and where the existence of a dependent child will determine the change in financial risk tolerance in a similar fashion.

Contrariwise, in order to overcome the negative mood state caused by undesirable life events (i.e., getting divorced, separating from a partner, and becoming widowed), the mood maintenance hypothesis would predict an increase in the individual's financial risk tolerance.

To summarize, the theoretical effects are ambiguous and are highly dependent on which framework is applied. Evaluating how a change in family structure affects individuals' financial risk attitudes is ultimately an empirical question.

2.2   Previous Literature

Prior studies investigating the relationship between family structure and individuals' risk attitudes, or changes in risk attitudes across time, can be divided into two fields: general risk-taking attitudes and domain-specific risk-taking attitudes (including for example financial risk-taking). While family status has been shown to have a considerable impact on financial risk attitude, few of these studies rely on data that are longitudinal. However, panel data analysis has been more widely used when assessing family changes' impact on general risk attitude. Consequently, we will in this section present studies investigating family transitions' impact on both general risk attitudes and financial risk attitudes.

Getting married and forming a domestic partnership

Several studies have been done assessing the impact of marriage on general risk aversion. Although a considerable amount of literature has shown that married individuals are relatively more risk averse (e.g. Jianakoplos & Bernasek 1998, Lin 2009, Halek & Eisenhauer 2001), few studies have investigated whether risk averse individuals are more likely to marry or whether individuals who marry become more risk averse. Browne et al. (2022) is one exception. By using longitudinal data from Germany, the authors investigate whether individuals' general willingness to take risks changes when they are getting married. Browne et al. (2022) find that the higher degree of risk aversion among married

individuals does not seem to stem from the actual wedding. The authors also conclude that the formation of a domestic partnership does not affect the general willingness to take risks. In regard to financial risk attitudes, prior studies report mixed evidence on whether marriage is associated with higher or lower levels of risk-taking. For example, financial risk tolerance has been shown to be higher for unmarried individuals compared to their married counterparts (e.g. Fan & Xiao 2006, Yao, Hanna & Lindamood 1983, Grable & Joo 2004). This is in contrast to Love (2010), who showed that married investors tend to hold more risky portfolios compared to single investors. Similarly, by examining differences in stockholdings across six European countries, Guiso, Haliassos & Jappelli (2003) conclude that married individuals tend to have a higher stock market participation compared to single individuals. This is in line with the results obtained by Bertaut (1998). Likewise, Christiansen, Joensen & Rangvid (2015) find that marriage increases the likelihood of holding stocks for both men and women. The authors also find that women increase their fraction of wealth invested in stocks after marriage, whereas the opposite holds true for men. Anbar & Eker (2010) did not find, when using an index comprised of numerous self-assessed financial risk measures, any association between being married and having low financial risk tolerance.

Entering parenthood and children leaving the household

Görlitz & Tamm (2015) analyze whether becoming a parent affects an individual's general risk attitude. By using the same data as Browne et al. (2022), Görlitz & Tamm (2015) found that the general risk aversion of both men and women increases after the birth of their first child. The authors further conclude that risk attitudes begin to change as early as two years before giving birth. Multiple studies have come to the same conclusion where having the first child is associated with a higher level of general risk aversion (Chaulk et al. 2003, Browne et al. 2022). With respect to financial risk-taking, having dependent children is negatively correlated with financial risk tolerance (Chaulk et al. 2003, Grable & Joo 1999, Van de Venter et al. 2012). By using a cross-sectional survey from the U.S., Jianakoplos & Bernasek (2006) find that the stated (i.e., subjective) financial risk measure is lower for households with children compared to households without children. However, children do not seem to have a significant impact on observed portfolio allocations (Jianakoplos & Bernasek 2006). In an American cross-sectional study, Chaulk

(2000) find that subjective financial risk tolerance is lower for young individuals with children compared to their childless counterparts. This result was however not present in the high-income group, where the result showed the opposite relationship. Among the older individuals, no differences in financial risk tolerance between individuals with and without children were established (Chaulk 2000). Anbar & Eker (2010) found no association between having children and overall financial risk tolerance when using an index comprised of numerous self-assessed financial risk measures. Few studies have examined the effect of children leaving the household on an individual's risk aversion. An exception to this is Browne et al. (2022), the authors did not find any change in risk aversion when a child moved out from home.

Getting divorced, separating from a partner and entering widowhood

Not much is known about how a divorce or separation from a partner affects general risk aversion. The reason for this is that the majority of surveys do not provide information about whether an individual is single because of a recent separation, or if she has been single for a longer period of time. Browne et al. (2022) is one exception. The authors found that going through a divorce does not affect general risk aversion. Separating from a partner on the other hand is associated with a higher willingness to take risks (Browne et al. 2022). With respect to financial risk-taking, women invest less in risky assets after a divorce whereas the opposite has been shown for men (Christiansen et al. 2015, Love 2010). However, whether an individual has children also affects financial investments after a divorce. Love (2010) found that men with children invest not even half as much as men without children after a divorce. In an Australian longitudinal study, Van de Venter et al. (2012) found no significant relationship between a divorce and financial risk tolerance.

Prior literature reports mixed evidence on whether widowhood increases or decreases general risk-taking. Dohmen et al. (2011) found that widows and widowers have a higher general risk aversion compared to single individuals, while Browne et al. (2022) suggest that the difference in risk aversion is not linked to the transition of losing a life partner. In regard to financial risk behavior, becoming widowed decreases investments in risky assets for both women and men, where the effects are particularly pronounced for women (Love 2010).

2.3   Motivation

We will contribute to the existing literature in mainly three ways. Firstly, most previous studies investigating the relationship between family structure and financial risk attitude have used cross-sectional data. We will therefore extend this research by using a comprehensive panel data analysis, spanning a period of almost 30 years. Using a panel data setting enables us to define whether individuals that are getting married have a higher financial risk aversion, or if individuals with a higher financial risk aversion are more likely to get married. Using the longitudinal setting of the DHS data, therefore, allows us to better distinguish whether changes in family structure affect individuals' financial risk attitudes.

Although most studies have used cross-sectional data when evaluating the impact of family changes on financial risk attitudes, there are some exceptions where panel data has been used. Most of these panel data studies have however only studied a short period of time. We will therefore contribute to this strand of literature by examining data spanning over almost 30 years. This makes our data stand out in comparison to the existing research within this field. When studying how different family transitions affect individuals' risk attitudes, having a generous amount of data is advantageous. This increases the likeliness of people changing family status, leading to a larger sample size.

Lastly, a large set of different life events will be investigated in this study. To the best of our knowledge, no other studies have addressed such a large amount of life events in the same paper when investigating the impact of changes in family structure on individuals' financial risk attitudes.

3 Data

3.1 Data Restrictions

This study is based on data from the De Nederlandsche Bank Household Survey (2021), DHS. The DHS is a longitudinal survey, focusing on economic and psychological aspects of financial behavior of Dutch households. The survey is run by CentERdata (Tilburg University) and sponsored by De Nederlandsche Bank. The DHS has been conducted on an annual basis since 1993, and all data is available through the DHS Data archive which can be found on their website. The main topics included are work, pensions, accommodation, mortgages, income, assets, liabilities, health, perception of personal financial situation, and perception of risks. The DHS panel consists of 2000 households (comprising 5000 individuals), representative of the Dutch population. The members complete the surveys online and households that could not otherwise participate are provided with a computer and Internet connection.

This study covers the time period between 1993 and 2021, thus a total of 29 waves are included in the analysis. The longitudinal setting of the DHS allows us to better reveal the impact of changes in family structure on individuals' financial risk attitudes compared to cross-sectional data. In this way, we can control for time-invariant unobserved heterogeneity across individuals that otherwise might affect the outcomes.

We are restricting our data to include only respondents who have participated in the DHS panel during at least 2 waves. Further on, since minors are not allowed to make any financial investments according to the Dutch law (ABN AMRO 2022), they will be excluded in the analysis.[4] Another criterion is that a respondent's observation will be excluded during the years she is considered as a "child living at home". This is in line with the previous criteria, which allows us to restrict the study to adults who have moved away from their parents' home. However, note that the individual is continuously included in the analysis from the year she has left the parental home. After having excluded these individuals, the sample consists of 5 472 individuals and almost 51 000 observations.

Since men and women in some situations appear to have different roles in e.g. parenthood (see e.g. section 2.1.2 where women are assumed the protector role and men the provider role), we will investigate whether the impact of changes in family structure

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[4]In the Netherlands, a minor is legally defined as a person under the age of 18 (Business.gov.nl 2022*a*).

on risk attitudes differ by gender. In this way, we might be able to explain some of the gender differences in risk aversion.[5]

3.1.1 Dependent Variables

There are several different types of financial risk and ways of measuring it. Bran & Vaidis (2020) have defined four main risk-taking concepts that one can study: risk-taking behavior, risk-taking propensity, risk-taking attitude, and risk appraisal. These four concepts are however not completely independent from each other. Some of the most common ways of measuring financial risk-taking are by observing financial investments, investigating hypothetical lottery questions, and studying subjective financial risk attitudes (Bran & Vaidis 2020). Subjective financial risk attitude is based on self-assessed questions about an individual's tendency to take financial risks. This measure has been proven to be one of the most reliable measures of risk attitude since it has been shown to be associated with risk-taking behaviors (Bran & Vaidis 2020). We will in this study, therefore, focus on self-assessed financial risk attitudes.

We investigate the relationship between changes in family structure and financial risk attitude by using an index composed of six different self-assessed measures of financial risk attitude. The index will be constructed using a principal component analysis, which we will discuss further in section 4.1.1. The respondents can choose a number between 1 and 7 on the Likert scale, where 1 means 'totally disagree' and 7 means 'totally agree'.[6] Additionally, we will create a different dependent variable for the sensitivity analysis (mentioned in section 4.3). This variable will be composed as the aggregated value of the six questions on risk attitude. Since the questions are measured on a Likert scale with answer options between 1 and 7, the aggregated risk variable can take on values between 6 and 42. The questions included in the index of financial risk attitude are displayed in Table 1.

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[5]Experimental studies and surveys have shown that women in general display more risk averse behavior compared to men (e.g. Charness & Gneezy 2012, Eckel & Grossman 2008).

[6]A Likert scale is a type of psychometric scale that is frequently used in psychology questionnaires. It is normally designed to measure individuals' attitudes, opinions, or perceptions, and the answer options are presented in a categorical fashion.

Table 1: Description of self-assessed questions of financial risk attitude

Variable	Definition
Risk measure 1	I think it is more important to have safe investments and guaranteed returns, than to take a risk to have a chance to get the highest possible returns.
Risk measure 2	I do not invest in shares, because I find this too risky.
Risk measure 3	If I think an investment will be profitable, I am prepared to borrow money to make this investment.
Risk measure 4	I want to be certain that my investments are safe.
Risk measure 5	If I want to improve my financial position, I should take financial risks.
Risk measure 6	I am prepared to take the risk to lose money, when there is also a chance to gain money.

As one might notice, choosing a higher value for question 1, 2, and 4 indicates that the individual is more risk averse, whilst the opposite is true for the three remaining questions. We will therefore reverse the individuals' responses for question 3, 5, and 6 to make sure that the scale is consistent for all six questions. Choosing a higher value on the Likert scale will therefore indicate that an individual has a perception of themselves being more risk averse.

3.1.2 Life Events

We investigate the relationship between changes in family structure and financial risk attitude by examining eight different life events, which can be divided into three sub-groups: desirable, undesirable, and neutral life events. This is according to psychological literature, where a social readjustment rating scale (SRRS) is widely used. This scale was originally introduced by Holmes & Rahe (1967) but has since then been modified and reevaluated by Scully, Tosi & Banning (2000). The SRRS identifies major stressful life events and measures to what degree these different life events impact individuals' stress levels. The life events studied in this paper are all included in the SRRS and have a high ranking on the scale. These life events, as well as the number of individuals who changed family state between the period 1993 - 2021, can be found in Table 2.

Table 2: Statistics of life transitions

Desirable	n	Undesirable	n	Neutral	n
Got married	584	Got divorced	128	First child moved out	1233
Formed partnership	433	Entered widowhood	165	Last child moved out	349
Entered parenthood	528	Got separated	560		

The different life transitions have been created using data about the civil status and family compositions. Desired life events are linked with family growth, whereas undesirable life events are associated with a decrease in family size. Children leaving home is neither linked with the growth nor the decline of the family size and therefore remains a neutral life event. It is also important to note that the chosen life events will affect individuals in different ways. A pregnancy might be highly welcome for one individual, but this might not be the case for everyone. We will therefore stay by the definitions of growth/decline of the family size when defining desirable and undesirable life events. We acknowledge that there could be exceptions to this way of categorizing life events.

Note that the first child leaving home does not necessarily have to be the first born. First child leaving home simply refers to the first of the children to leave home. Similar reasoning is applied to the last child leaving home, indicating that there are no more children living in the household. Separating refers to separating from a domestic partnership.

In Table 2, one can see that the most common life event in our sample is first child leaving the household. This could be explained by the fact that the average age in our sample is above the average age in the Netherlands.[7] Thereafter, getting married, forming a domestic partnership, entering parenthood, and separating are approximately equally common. Less common are divorces, entering widowhood, and last child leaving home.

3.1.3 Baseline Characteristics

The DHS data set includes a set of demographic variables. We will divide demographic variables into two categories, time-variant and time-invariant variables. We will give a brief explanation of these variables in this section. All independent variables which are used in our analysis, and their definition, can be found in Table A1.

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[7]The average age in our sample is 53 years old (as can be seen in Table 3), compared to around 42 years old in the Netherlands (Statistics Netherlands 2021).

Time-variant variables

The time-variant variables which will be included in our analysis are age, household income, level of education, and subjective health status. Age will be included since there are several studies that have shown that the willingness to take risks declines with age (Riley Jr & Chow 1992, Jianakoplos & Bernasek 2006, Dohmen et al. 2011). In our analysis, age is measured as a continuous variable. Wealthier individuals are more willing to take risks (Dohmen et al. 2011, Hallahan et al. 2004, Chang et al. 2004, Riley Jr & Chow 1992), income will therefore be included in the analysis. The total net household income is measured on a 11-point scale (1 = under €8,000 to 11 = over €75,000) and is reported for the year prior to the survey year. Using income at the household level as a measurement of wealth is in line with previous studies. The underlying reason is that it is argued that an individual's risk attitude is not only a factor of the individual's own income but instead the entire household's income. Moreover, several studies report a positive relationship between financial risk tolerance and education (Hallahan et al. 2004, Hawley & Fujii 1993). The level of education refers to completed education and is categorized into three levels (primary education = 1, secondary education = 2, and academic education = 3). Additionally, an individual with better health has been shown to take more financial risk (Bucciol & Zarri 2015). Health status is a subjective measure where the respondents can choose an answer between 1 and 5, where 1 is excellent health and 5 is poor health. Finally, according to both theory and previous literature, having children can be considered an important factor in explaining an individual's risk aversion (Jianakoplos & Bernasek 2006, Chaulk 2000). Consequently, having dependent children will be included to control for potential differences in individuals' risk attitudes.

Time-invariant variables

The time-invariant variables which will be included in our analysis are gender and height. As already mentioned, there is strong evidence that females are more risk avert compared to men (Dohmen et al. 2011, Charness & Gneezy 2012, Eckel & Grossman 2008). Furthermore, an individual's height has shown to have a significant impact on willingness to take risks, where an increasing height is associated with a greater risk tolerance (Dohmen et al. 2011). Gender is measured as a dummy variable (male = 0; female = 1), and height is reported as a continuous variable (measured in centimeters).

3.2 Limitations and Critical Discussion of the Data

As in any study, there are limitations to the data. In this section, we will discuss the main potential issues with our data at hand, while we will go into a further discussion in section 7.

Firstly, one issue with our data is the fact that we cannot distinguish between the first time the individual experiences a certain life event and the subsequent times. For example, we cannot distinguish whether it is an individual's first time getting married or the third time. The only life events we can distinguish are those correlated with children (i.e., entering parenthood, first and last child leaving home). Knowing whether it is an individual's first time experiencing a particular life event would be valuable information. This could improve our analysis by distinguishing if risk attitudes change more drastically the first time the individual experiences the life event compared to subsequent times, or if the life event affects risk attitudes in a similar fashion each time.

According to Dutch divorce rules, there is no requirement of a waiting period before one can obtain a formal ending of the marriage in the Netherlands (European e-Justice 2021). This implies that individuals do not need to live in separate households before obtaining a dissolution of the marriage. Although there is no stringent timetable to get divorced in the Netherlands, we cannot rule out the possibility of married individuals living in separate households before they have decided to receive an official divorce order. This brings us to the second limitation of our data, i.e., that the DHS data does not allow us to distinguish if a married couple is living separately for the time being or not. Hence, it is still possible for a married couple to live in separate households before the actual divorce has taken place. The respondents in the DHS survey will need to answer that they are either married or separated, while none of those responses fully capture the true situation.

Thirdly, and perhaps most importantly, there is a potential threat of attrition bias in our data. Attrition can always occur in surveys, which is not a problem as long as the attrition is randomized through time. However, if the attrition is non-randomized, the data will suffer from selection bias (Dahmström 2011). It is usually very difficult to examine whether a data set suffers from attrition bias or not. Hence, there is no general method that is practiced with regard to this issue. Fitzgerald, Gottschalk & Moffitt (1998) however state that one way of testing for attrition is to use a probit model where

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one creates a new variable which is equal to 1 if the respondent is no longer answering the survey from one wave to the next and 0 otherwise. Hence, we have examined attrition bias using this model and the results can be found in the Appendix (Table A5, Table A6 and Table A7). Age is significant throughout the majority of the regressions. Additionally, income and education are significant throughout the first decade (1993 - 2000), but is mostly non-significant throughout the rest of the regressions. Lastly, subjective health is significant sporadically throughout the entire time period. This would indicate that there is no greater occurrence of attrition bias in the data.

In order to generalize the findings of this study, it is important for the data set to be representative of the general population in the Netherlands. Teppa & Vis (2012) wrote a report about the CentERpanel and the DNB Household Survey in 2012. In regard to representativeness, they compared the statistics of the CentERpanel with the statistics from Statistics Netherlands (CBS) in the year 2009/2010. They found that the CentERpanel is representative in most aspects although some demographics were under- or over-represented. They found an over-representation of individuals with a high education level and an under-representation of the middle level. There was also an under-representation of single households. Individuals living in a highly urbanized setting were also underrepresented. However, CentERpanel tries to continuously improve the data quality to make sure it represents the general Dutch population to the greatest extent (Teppa & Vis 2012). CentERpanel also uses sample weights to correct this kind of issue (Teppa & Vis 2012).

Finally, misreporting can also be a potential issue. Misreporting can occur for different reasons. The most obvious reasons are typing errors or that the respondent has misunderstood the question. There might also be misreporting in the case of more sensitive subjects, such as health behaviors, gambling, or simply questions relating to money. There is also a possibility that the respondents do not remember the answer to some questions correctly. All these types of misreporting can lead to either an under-or over-estimation of the variables used in this analysis. It is therefore important to consider misreporting when discussing the results of this study.

3.3   Descriptive Statistics

Descriptive statistics of the variables used from the DHS data are reported in Table A2 and Table 3. Table A2 displays the descriptive statistics for the chosen life events whilst Table 3 displays the descriptive statistics for baseline characteristics. Since we are conducting our analysis on all individuals as well as men and women separately, we have chosen to divide the descriptive statistics in a similar way. Additionally, we have conducted t-tests in order to determine if there is a difference in mean between men and women in each variable.

As can be seen in Table A2, there are around 40 000 observations for each variable when including the entire sample. As can be noted, there are a few thousand more observations for men compared to women. This can also be seen in Table 3, where the variable gender is equal to 0.45, indicating that our sample includes somewhat more men than women. Further, one can see in Table A2 that the mean for getting married, forming a domestic partnership, entering parenthood, and getting separated are quite similar. First child leaving home has the highest mean amongst the life event variables, indicating that this is the event that has occurred most times among the life events. Getting divorced, entering widowhood, and the last child moving out, have the smallest mean values. All of these results follow the results from Table 2, which displays how many individuals have experienced each life event at least once. In all but two life events, men and women in our sample seem to be equally exposed to each event. However, women in our sample have separated from a partner to a higher degree than men. Men on the other hand have experienced the first child moving out to a higher degree compared to women.

Table 3 displays the descriptive statistics for baseline characteristics. Firstly, one can note that the mean values differ between men and women for all variables. For example, men are married and have children to a higher extent than women in our sample. Men are also older, have higher household income, higher educational levels, better subjective health, and are taller than women. Women on the other hand are in domestic partnerships, divorced, separated, and widows to a higher extent compared to the men in our sample.

Regarding the values for all individuals in the sample, one can see that most individuals are married and have children (approximately 70% of the sample). Around 9% of the

sample are in a domestic partnership, 5,9% are divorced, 1,5% are separated and 4,5% are widowed (note that more women are widowed compared to men, 6% versus 0,3%). Further, the average age of the sample is 53 years old, the yearly net household income is between €20,000 and €26,000, the average education level is secondary school and the average subjective health is good.

Table 4 displays the descriptive statistics of the six risk measures used to create the financial risk index as well as the aggregated risk measure. Women are more risk averse than men in all seven risk measures, which is in line with findings in previous literature (see section 2.2). Most measures (except for the aggregated measure) have an average value of around 5, indicating that the majority of our sample tends to be more risk averse. Both men and women have the lowest average risk attitude in risk measure 2, where the average risk attitude is 4.3 among men and 5.0 among women. In contrast, both men and women have the highest average risk attitude in risk measure 3, where the average risk attitude is 5.6 among men and 6.0 among women.

Table 3: Summary statistics for baseline characteristics

Variable	Gender	Mean	Std. dev.	Min	Max	Obs
Civil status						
	Men	0.72***	0.45	0	1	27,253
Married	Women	0.64***	0.48	0	1	22,664
	All	0.68	0.47	0	1	49,917
	Men	0.08***	0.28	0	1	27,253
In a domestic partnership	Women	0.09***	0.30	0	1	22,664
	All	0.09	0.29	0	1	49,917
	Men	0.70***	0.46	0	1	24,250
Parent	Women	0.69***	0.46	0	1	19,860
	All	0.70	0.46	0	1	44,110
	Men	0.04***	0.21	0	1	27,253
Divorced	Women	0.07***	0.27	0	1	22,664
	All	0.05	0.24	0	1	49,917
	Men	0.01*	0.12	0	1	26,334
Separated	Women	0.01*	0.13	0	1	21,608
	All	0.01	0.12	0	1	47,942
	Men	0.01***	0.06	0	1	27,253
Widowed	Women	0.06***	0.24	0	1	22,664
	All	0.04	0.21	0	1	49,917
Time-variant variables						
	Men	55***	15	18	96	27,254
Age	Women	51***	15	18	95	22,664
	All	53	15	18	96	49,918
	Men	7.4***	1.97	1	11	23,762
Net household income	Women	7.0***	2.26	1	11	43,394
	All	7.2	2.07	1	11	49,917
	Men	2.3***	0.52	0	3	27,254
Education level	Women	2.2***	0.50	0	3	22,664
	All	2.3	0.51	0	3	49,918
	Men	2.1***	0.73	1	5	27,254
Subjective health	Women	2.2***	0.74	1	5	22,664
	All	2.1	0.74	1	5	49,918
Time-invariant variables						
	Men	180***	7.34	150	210	27,254
Height	Women	168***	6.23	140	204	22,664
	All	175	9.31	140	210	49,918
Gender	All	0.45	0.50	0	1	49,918

Notes: p-values from t-tests for differences in means between men and women are shown above.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Summary statistics for dependent variables

Variable	Gender	Mean	Std. dev.	Min	Max	Obs
	Men	4.9***	1.8	1	7	24,638
Risk measure 1	Women	5.1***	1.9	1	7	18,553
	All	5.0	1.9	1	7	43,191
	Men	4.3***	2.1	1	7	24,741
Risk measure 2	Women	5.0***	2.0	1	7	18,628
	All	4.6	2.1	1	7	43,369
	Men	5.6***	1.7	1	7	24,802
Risk measure 3	Women	6.0***	1.5	1	7	18,755
	All	5.8	1.6	1	7	43,557
	Men	5.3***	1.5	1	7	24,690
Risk measure 4	Women	5.4***	1.6	1	7	18,625
	All	5.4	1.5	1	7	43,315
	Men	4.9***	1.7	1	7	24,654
Risk measure 5	Women	5.3***	1.6	1	7	18,555
	All	5.1	1.7	1	7	43,209
	Men	5.2***	1.6	1	7	24,792
Risk measure 6	Women	5.8***	1.4	1	7	22,664
	All	5.4	1.6	1	7	43,546
	Men	30***	6.3	6	42	24,061
Aggregated risk measure	Women	33***	5.8	6	42	17,987
	All	31	6.2	6	42	42,048

Notes: p-values from t-tests for differences in means between men and women are shown above.

*** p<0.01, ** p<0.05, * p<0.1

4 Methodological Framework

We will in this chapter explain how the dependent variables are constructed and the choice of estimation models.

4.1 Index of Financial Risk Attitude

4.1.1 Principal Component Analysis

As mentioned in section 3.1.1, an index will be constructed based on six questions on financial risk attitude. This will be done by using a principal component analysis (henceforth PCA). PCA is a multivariate method that is used for data reduction. The main idea behind the PCA is to represent a set of variables by a smaller number of variables, so-called principal components, which account for most of the variance in the original variables (Rencher 2005).

There are some requirements that the data must fulfill if the PCA should give valid results. Firstly, the variables should be linearly correlated to each other (Manly 2005). By looking at scatter plots of pairs of variables, we can conclude that there are linear relationships between all six variables. Furthermore, the PCA is normally based on the Pearson correlation matrix of the involved variables. This matrix assumes that all variables are normally distributed and continuous (Rencher 2005). When using variables that are measured on a Likert Scale (i.e., classified as ordinal data), the assumptions about normal distribution and continuousness are generally violated. However, a Likert scale containing five values or more can be considered as continuous (Dahmström 2011). In order to determine whether the six variables follow a normal distribution, we have conducted a Skewness and Kurtosis test. The results show that none of the six variables follow a normal distribution. Consequently, we will use the Polychoric correlation matrix instead of the Pearson matrix. The Polychoric matrix is based on maximum likelihood estimation and does not require the variables to follow a normal distribution or to be continuous (Rencher 2005). Furthermore, to determine how well suited the data is for using a principal component method, a Kaiser-Meyer-Olkin test (KMO) can be conducted (Dziuban & Shirkey 1974). The higher KMO-value, the more suited the data is to PCA. The KMO-value of our data is 0.69, which is considered adequate (Dziuban & Shirkey 1974). When conducting the PCA in Stata, so-called eigenvalues are obtained.

Eigenvalues are the variances of the principal components (Rencher 2005). The first principal component, which has the largest eigenvalue, will be kept in our analysis.

4.1.2 Standardization

In order to ease the interpretation of the coefficients in the regressions, we have chosen to standardize our dependent variable (the index of financial risk attitude constructed using PCA). When standardizing variables, the variables become rescaled to having a mean of zero and a standardization of one (UCLA Statistical Consulting Group n.d). One can standardize a variable using the following formula:

$$x_s = \frac{x - m}{sd} \tag{1}$$

In equation (1), x_s represents the standardized variable, x represents the original variable, m represents the mean of the variable x, and sd represents the standard deviation of the variable x.

4.2 Estimation Models

In this section we will present the two different estimations techniques, i.e., ordinary least squares (OLS) regression and fixed effects model. Although the latter method is used as the main estimation technique, the OLS regressions will foremost be used as a means to see how our data compares to previous studies using cross-sectional data.

4.2.1 Ordinary Least Squares Regression

We will use an ordinary least squares regression to examine the relationship between family status and risk attitudes. The estimation model is specified as follows, where the dependent variable of interest is $RiskAttitude$:

$$RiskAttitude = X\beta + \pi + \alpha_1 LifeStatus_1 + ... + +\alpha_n LifeStatus_n + \epsilon \tag{2}$$

In equation (2), X represents a vector of individual characteristics, including age, net household income, educational level, subjective health, gender, and height. We will also add age squared as an independent variable, which allows us to account for non-linear effects of age on risk attitudes rather than assuming that the effect is linear for all ages

(see e.g. Bertocchi et al. 2011). $LifeStatus_n$ is our independent variable of interest and defines a particular family status n, such as being married, being divorced, or being a parent.

4.2.2 Fixed Effects Model

A fixed effects model will be applied, utilizing both individual fixed effects and year fixed effects in the regressions.[89] By using a fixed effects model, we can control for observed and unobserved characteristics that do not vary over time. We can control for individual-specific characteristics, such as gender and height, that might be essential determinants of an individual's risk aversion. The year fixed effects, meanwhile, controls for time trends or any aggregate effects. For example, macroeconomic shocks such as financial crisis, which in turn might affect aggregate risk preferences (Guiso et al. 2018, Malmendier & Nagel 2011). The estimation model is specified as follows, where the dependent variable of interest, $RiskAttitude_{it}$, denotes a particular risk attitude for individual i at time t:

$$RiskAttitude_{it} = X_{it}\beta + \pi_t + \alpha_1 LifeEvent_{1it} + ... + \alpha_n LifeEvent_{nit} + \epsilon_{it} \qquad (3)$$

In equation (3), X_{it} represents a vector of individual characteristics that vary over time, including age, net household income, educational level, and subjective health status. Similar to equation (2), age squared will be added as an independent variable. Furthermore, π_t are the year-specific effects. Our independent variable of interest, $LifeEvent_{nit}$, defines a particular family change n for individual i at time t. It is represented by a binary variable that records family transitions between survey waves.

General Diagnostic Tests

In addition to the tests already conducted on the fixed effects model (i.e., Hausman-test and Testparm), we will perform several diagnostic tests to ensure the quality of our data and analysis.

A test for heteroscedasticity will be conducted using the Modified Wald statistics. The

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[8]A Durbin-Wu-Hausman test can be conducted in order to differentiate between fixed effects and random effects models in panel analysis (Verbeek 2008). In our case, the Hausman-test supports the choice of a fixed effects model.

[9]Additionally, Testparm (there is no official name for this test, but in the statistical software Stata it is called Testparm) can be conducted in order to conclude whether year fixed effects should be included. In our case, Testparm supports the choice of year fixed effects.

test concludes that all of the OLS and fixed effects regressions suffer from heteroscedasticity. Thus, clustered standard errors on the individual level will be used in order to control for heteroscedasticity (Angrist & Pischke 2008). Additionally, a correlation matrix will be used to determine if the model suffers from multicollinearity. The results from the correlation matrix can be found in the Appendix. A high internal correlation between the independent variables would indicate that the model suffers from multicollinearity. As can be seen in table A3 and A4, neither model suffers from multicollinearity, hence all independent variables will be kept in the analysis.

4.3 Sensitivity Analysis

Lastly, a sensitivity analysis will be conducted to check the robustness of our main results from the fixed effects regressions. The model specification will follow that of the fixed effects model, i.e., equation (3), using the same life events and control variables. The main difference is that we will conduct the robustness check using the aggregated risk measure as a dependent variable (mentioned in section 3.1.1). This variable is standardized in the same manner as described in equation (1) above.

5 Results

Table 5: Ordinary Least Squares Regressions

| Variable | Ordinary Least Squares | | |
	(1) Men	(2) Women	(3) All
Desirable life events			
Married	0.0949***	0.0123	0.0591***
	(0.0672)	(0.0573)	(0.0449)
In a domestic partnership	0.0254	-0.0245	0.0055
	(0.0721)	(0.0622)	(0.0483)
Parent	0.0292	0.0438**	0.0362**
	(0.0494)	(0.0386)	(0.0320)
Undesirable life events			
Divorced	0.1061***	0.0107	0.0499*
	(0.0963)	(0.0773)	(0.0616)
Widowed	-0.0146	0.0726	0.0300
	(0.0997)	(0.0904)	(0.0677)
Separated	-0.0020	-0.1250	-0.0594
	(0.0669)	(0.0701)	(0.0485)
Neutral life events			
First child has moved out	-0.0451	0.0579	-0.0009
	(0.0419)	(0.0462)	(0.0312)
Last child has moved out	-0.0326	-0.0200	-0.0275
	(0.0792)	(0.0769)	(0.0553)
Control variables			
Age	0.0237***	0.0078**	0.0147***
	(0.0077)	(0.0071)	(0.0053)
Age^2	-0.0001***	0.0000	0.0000*
	(0.0000)	(0.0000)	(0.0000)
Income	-0.0362***	-0.0211***	-0.0295***
	(0.0100)	(0.0081)	(0.0064)
Education	-0.1366***	-0.0754***	-0.1058***
	(0.0364)	(0.0336)	(0.0253)
Health	0.0376***	0.0241**	0.0332***
	(0.0212)	(0.0201)	(0.0149)
Height	-0.0014	-0.0028**	-0.0022***
	(0.0026)	(0.0025)	(0.0018)
Gender	-	-	0.4037***
	-	-	(0.0340)
Constant	-0.3965*	0.5616**	-0.0795
	(0.5260)	(0.4657)	(0.3668)
Observations	17,440	13,518	30,958
R^2	0.0508	0.0397	0.0833

Notes: Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

5.1 Ordinary Least Squares Regressions

The OLS regression is used to determine if there is an association between family status and an individual's financial risk attitude. The financial risk attitude index, conducted using PCA, is used as a dependent variable in the OLS regressions. The reference group in the regressions is a male with a primary education background who considers himself to have excellent health and a yearly net household income of €0 - €8000. All results are found in Table 5.

Entire sample

As we can see in Table 5 column 3, the majority of the independent variables used in the regression are significant and therefore linked to an individual's financial risk attitude.

Desirable life events

All desirable life events have a positive impact on financial risk attitude, except for living in a domestic partnership. This indicates that being married and having children are associated with higher levels of risk aversion. More precisely, being married is associated with being 0,06 standard deviations more risk averse, whilst having children is associated with 0,04 standard deviations increase in risk aversion. Since living in a domestic partnership is non-significant, we cannot rule out that there might not be any association with the financial risk attitude.

Undesirable life events

As one can see in Table 5 column 3, being divorced is the only variable that is significant. Being divorced has a positive value but is only significant at a 10% level. This would indicate a weak association where being divorced is associated with being 0,05 standard deviations more risk averse.

Neutral life events

As we can see in Table 5 column 3, neither having the first nor the last child moved out is linked with an individual's financial risk attitude, since the variables are non-significant.

Control variables

As we can see in Table 5 column 3, all control variables chosen in this model show a strong

association with an individual's financial risk attitude (all variables are significant at a 1% level except age squared, which is only significant at a 10% level). Being older, having a worse self-assessed health status, and being a woman are associated with a higher risk aversion. In contrast, having a higher income, a higher education, and being taller are associated with being less risk averse.

Men and women

As we can see in Table 5 columns 1 and 2, there exist a few differences between which variables that are significant when studying men and women separately. Below, we will discuss those results which are significant on at least a 10% level.

Desirable life events

As we can see in Table 5 columns 1 and 2, being married is associated with being 0,10 standard deviations more risk averse among men. Among women, being a parent is associated with being 0,04 standard deviations more risk averse. Both variables are significant at a 5% level.

Undesirable life events

As we can see in Table 5 columns 1 and 2, being divorced is associated with being 0,11 standard deviations more risk averse among men. This is significant at a 1% level. Among women, no undesirable life event is significant.

Neutral life events

As we can see in Table 5 columns 1 and 2, among both men and women, no neutral life event is significant.

Control variables

As we can see in Table 5 columns 1 and 2, all control variables among both men and women are significant with an exception for height among men and age squared among women. Being older and having a worse self-assessed health status, are associated with higher levels of risk aversion. This applies to both men and women. Having a higher income and a higher education are, on the other hand, associated with being less risk averse. Among women, being taller is associated with lower levels of risk aversion.

5.2 Fixed Effects Regressions

Table 6: Fixed Effects Regressions

| | Fixed Effects | | |
| | (1) | (2) | (3) |
Variable	**Men**	**Women**	**All**
Desirable life events			
Got married	-0.0019	0.1013	0.0380
	(0.0590)	(0.0923)	(0.0763)
Formed partnership	-0.0590	-0.0432	-0.0531
	(0.0579)	(0.0682)	(0.0445)
Entered parenthood	0.0133	0.0201	0.0179
	(0.0514)	(0.0753)	(0.0435)
Undesirable life events			
Got divorced	-0.1906*	-0.0091	-0.1152
	(0.1071)	(0.1227)	(0.0805)
Entered widowhood	-0.1589**	0.0474	-0.0780
	(0.0790)	(0.1187)	(0.0673)
Got separated	-0.0658	-0.1748*	-0.1127*
	(0.0809)	(0.0924)	(0.0608)
Neutral life events			
First child moved out	0.0018	0.0549	0.0236
	(0.0334)	(0.0357)	(0.0247)
Last child moved out	-0.0857	0.0007	-0.0501
	(0.0697)	(0.0673)	(0.0487)
Control variables			
Time-variant controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Constant	3.6759	-0.6062	3.0790
	(0.6849)	(0.3511)	(0.4966)
Observations	15,779	11,991	27,770
Individuals	2,892	2,580	5,472
R^2	0.0345	0.0348	0.0311

Notes: Robust standard errors in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$
R^2 indicates the within measure for the fixed effects model.

The fixed effects regression is, as mentioned earlier, our main analysis. The dependent variable is the financial risk attitude index, conducted using PCA. The reference group in this regression is a male with a primary education background, who considers himself to have excellent health and has a yearly net household income of €0 - €8000. All results are found in Table 6.

Entire sample

Desirable life events
As we can see in Table 6 column 3, getting married and entering parenthood are associated with being more risk averse whilst forming a domestic partnership is associated with being less risk averse. None of the desirable life events, however, are significant. We can therefore not draw any conclusion from these results.

Undesirable life events
As we can see in Table 6 column 3, all three undesirable life events are associated with being less risk averse. However, only the life event separating is significant. Separating seems to be associated with being 0,11 standard deviations less risk averse. However, separating is only significant at a 10% level, indicating a weak significance.

Neutral life events
As we can see in Table 6 column 3, neither having the first nor the last child moved out are linked with an individual's financial risk attitude, since the variables are non-significant. The variables however show different effects. When the first child moves out it seem to indicate that individuals become more risk averse. In contrast, when the last child moves out it seem to indicate that individuals become less risk averse. However, as mentioned earlier, we cannot draw any conclusion from these coefficients since they are both insignificant.

Men and women

As we can see in Table 6 columns 1 and 2, there exists a few differences between which variables are significant when studying men and women separately.

Desirable life events

As we can see in Table 6 columns 1 and 2, getting married seems to have the opposite effect on men and women. Men tend to become less risk averse after getting married, whilst women seem to become more risk averse after getting married. Forming a domestic partnership seems to decrease an individual's risk aversion for both men and women. Finally, entering parenthood seems to increase an individual's risk aversion. However, none of these estimates are significant and we can therefore not draw any conclusion from these results.

Undesirable life events

As we can see in Table 6 columns 1 and 2, getting divorced seems to lead to an individual becoming less risk averse among both men and women. Among men, getting divorced is significant at a 10% level and is associated with being 0,19 standard deviations less risk averse. The coefficient is not significant among women. Becoming a widower seems to decrease the extent to which an individual is risk averse with 0,16 standard deviations. The coefficient is significant at a 5% level. Among women, the effect seems to be the opposite. However, the coefficient is insignificant. Getting separated seems to decrease the extent to which an individual is risk averse among both men and women. The coefficient is, however, only significant among women where the significance level is 10%. Nevertheless, the results imply that separating is associated with being 0,18 standard deviations less risk averse among women.

Neutral life events

As we can see in Table 6 columns 1 and 2, when the first child moves out both men and women seem to become more risk averse. When the last child moves out, men seem to become less risk averse whilst women seem to become more risk averse. None of the variables are significant for either gender, however, and we can therefore not draw any conclusions.

All in all, the results from the fixed effects model show that when examining the entire sample, separating seems to reduce an individual's risk aversion by 0,11 standard deviations. Among men, getting divorced is associated with being 0,19 standard deviations less risk averse. Becoming widowed also seems to reduce an individual's risk aversion by 0,16 standard deviations. Likewise, among women, separating seems to reduce an

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individual's risk aversion by 0,18 standard deviations. Hence, only undesirable life events seem to affect an individual's risk attitude. Furthermore, these life events seem to have a negative impact on an individual's risk aversion.

5.3 Sensitivity Analysis

Table 7: Sensitivity Analysis

| | Fixed effects | | |
| | (1) | (2) | (3) |
Variable	**Men**	**Women**	**All**
Desirable life events			
Got married	-0.0514	0.0153	-0.0286
	(0.0621)	(0.0874)	(0.0511)
Formed partnership	-0.0541	0.0445	-0.0137
	(0.0565)	(0.0652)	(0.0431)
Entered parenthood	0.0022	-0.0052	-0.0015
	(0.0529)	(0.0667)	(0.0414)
Undesirable life events			
Got divorced	-0.0748	0.0570	-0.0206
	(0.1127)	(0.1114)	(0.0805)
Entered widowhood	-0.0803	-0.0557	-0.0647
	(0.0761)	(0.1138)	(0.0643)
Got separated	0.0172	-0.0448	-0.0065
	(0.0682)	(0.0825)	(0.0525)
Neutral life events			
First child moved out	0.0183	0.0036	0.0130
	(0.0279)	(0.0355)	(0.0220)
Last child moved out	-0.0687	-0.0642	-0.0672
	(0.0606)	(0.0636)	(0.0438)
Control variables			
Time-variant controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Constant	-14.4278	-0.8974	-13.6394
	(0.6687)	(0.3348)	(0.4734)
Observations	15,779	11,991	27,770
Individuals	2,892	2,580	5,472
R^2	0.0283	0.0233	0.0232

Notes: Robust standard errors in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$
R^2 indicates the within measure.

A sensitivity analysis is conducted to check the robustness of our main results from the fixed effects regressions. The dependent variable is the aggregated financial risk attitude explained in section 3.1.1. The reference group in this regression is a male with a primary education background, who considers himself to have excellent health and has a yearly net household income of €0 - €8000. All results are found in Table 7.

Entire sample

Desirable life events

As we can see in table Table 7 column 3, all three desirable life events seem to be associated with being less risk averse. However, none of these variables are significant.

Undesirable life events

As we can see in Table 7 column 3, all three undesirable life events are associated with being less risk averse. However, only the life event separating is significant. Additionally, separating is only significant at a 10% level, which shows a weak relationship between separating and financial risk attitude.

Neutral life events

As we can see in Table 7 column 3, neither having the first nor the last child moving out is linked with an individual's financial risk attitude. The variables, however, show different effects. When the first child moves out it seems to indicate that financial risk aversion increases. In contrast, when the last child moves out it seems to indicate that individuals become less risk averse. However, we cannot draw any conclusions from these coefficients since they are both insignificant.

Men and women

As can be seen in Table 7 columns 1 and 2, mixed evidence are found when examining men and women separately.

Desirable life events

As we can see in Table 7 columns 1 and 2, getting married seems to have the opposite effect on men and women. Men tend to get less risk averse after getting married whilst women seem to become more risk averse. Forming a domestic partnership seems to decrease an

individual's financial risk aversion for both men and women. Finally, entering parenthood seems to increase an individual's risk aversion. However, none of these coefficients are significant. Therefore, we cannot draw any conclusions from these results.

Undesirable life events

As can be seen in Table 7 columns 1 and 2, getting divorced seems to lead to a decrease in risk aversion among men and an increase in risk aversion among women. Becoming widowed seems to decrease the risk aversion among both men and women. Separating seems to increase an individual's financial risk aversion among men whilst the opposite seems to be true for women. However, none of these coefficients are significant. Therefore, we cannot draw any conclusions from these results.

Neutral life events

As we can see in Table 7 columns 1 and 2, men and women experience an increase in financial risk aversion when both the first and last child moves out. However, none of the variables are significant for either gender. We can therefore not draw any conclusions.

To conclude, none of the life events in the sensitivity analysis show a significant association with an individual's financial risk attitude. These findings differ from our main results. This would indicate that the results obtained are dependent on which outcome variable that is used in the analysis.

6 Analysis

6.1 Theoretical Analysis

Predicting how risk attitudes change throughout several different life stages is not that clear cut and (as discussed in section 2.1) the predictions for each life event depends on what theoretical framework is applied. The results used in the following analysis are the main results conducted using a fixed effects regression.

Getting married and forming a domestic partnership

Our main results show no relationship between getting married and an individual's risk attitude. Similarly, there is no association between forming a domestic partnership and an individual's risk attitude. As discussed in 2.1.4, there are many different factors at play.

The economies of scale and risk-pooling in a marriage (and a domestic partnership) would lead to a decrease in risk aversion according to the family economics theory. However, the mood maintenance hypothesis, as well as the family development theory together with the prospect theory, suggest the opposite predictions. Since our results are non-significant, this could indicate that the benefit of economies of scale and risk-pooling affects the risk aversion in a negative direction, while the societal expectation of newlyweds affects the risk aversion in a positive direction. These two effects might therefore cancel each other out. However, this is only speculation.

Entering parenthood

According to the predictions mentioned in 2.1.4, entering parenthood should lead to an increase in risk aversion. However, we found no significant relationship between entering parenthood and financial risk attitude. The increase in risk aversion would, according to the theories, be an effect of an increased financial burden and societal expectations as well as wanting to maintain a positive mood state. Why our results differ from the predictions might be explained by the fact that individuals experience increased costs, a change in societal expectations, and positive mood states earlier than the actual childbirth. For example, risk attitudes could change already by the time the couple finds out that they are expecting a child or when they start planning to become a family. There might

therefore be anticipation effects at play, which means that the change in risk attitude would not be seen in our data. Since the change in risk attitude could happen already a year or more before the actual life event, our results only state that the risk attitude does not change the year the first child is born. It would, however, be of interest to study this relationship further and examine whether, and to what degree, financial risk attitudes change in regard to entering parenthood.

Children leaving the household

Our main results show no relationship between either the first or last child leaving home and an individual's risk attitude. This result follows the predictions from the mood maintenance hypothesis. Family development theory and prospect theory however state that only the last child leaving home should have an impact on an individual's risk attitude. This is explained by the fact that the parents still experience the societal expectations of, for example, providing (financial) security to the children. According to family economics, costs will be reduced once the first child moves out and this should lead to a decrease in the parents' risk aversions. As mentioned, our results did not show any relationship between children leaving home and risk attitudes. This might reflect the fact that many parents, to some degree, still experience societal expectations. Therefore, children leaving home might not have an impact on the parents' financial risk attitudes.

Getting divorced, separating from a partner and entering widowhood

Our main results show that, among men, getting divorced and becoming a widower is associated with a decrease in risk aversion. Similar results are found for the life event separating when examining the entire sample as well as the subsample women. This result is in line with the mood maintenance hypothesis since the individual would presumably be in a negative mood after a divorce/death of partner/separation and hence become less risk averse. The other theories predict the opposite. For example, divorce or a death of partner will bring the risk-sharing mechanism and the benefits from economies of scale to an end, implying that the individual would become more risk averse after a divorce. It is therefore difficult to understand exactly what forces are at play and why the results differ between men and women. Since all three undesirable life events show similar results, this might show that it is not the specific life event itself that affects an individual's risk

attitude, but the fact that it is an undesirable life event.

6.2 Empirical Analysis

In this section, we will discuss both the results from the OLS regressions as well as our main results from the fixed effects regressions.

Getting married and forming a domestic partnership

Our results from the OLS regressions show that being married is associated with higher levels of risk aversion. This applies to both the entire sample and the subsample men. This result follows previous findings using cross-sectional data (e.g. Jianakoplos & Bernasek 1998, Lin 2009, Halek & Eisenhauer 2001, Fan & Xiao 2006, Grable & Joo 2004). Our main results from the fixed effects regressions, however, show no relationship between getting married and an individual's financial risk attitude. This follows the results from Browne et al. (2022), who also conducted a longitudinal study. Similarly, Anbar & Eker (2010) did not find any association between being married and an individual's risk aversion. This is in contrast to some of the literature on financial risk, where Love (2010), Guiso et al. (2003), Christiansen et al. (2015) found that married individuals seem to be less risk averse. These studies, however, use financial risk behavior as a dependent variable which contrasts with our study where we investigate financial risk attitudes. This could partially explain the ambiguous results.

Our results show no significant effect between forming a domestic partnership and an individual's financial risk aversion. Few previous studies have examined the impact of this life event on risk attitudes. Browne et al. (2022) is an exception. The authors found similar results to those obtained in our study.

Entering parenthood and children leaving the household

Our results from the OLS regressions show that being a parent is associated with being more risk averse when examining the entire sample. Among women, the same result holds. This follows the results of previous studies (e.g. Görlitz & Tamm 2015, Chaulk et al. 2003, Browne et al. 2022, Grable & Joo 1999, Van de Venter et al. 2012). This is in contrast to our main results from the fixed effects regressions, where we do not find any significant relationship between entering parenthood and financial risk attitude. Anbar

& Eker (2010) reached the same conclusion.

Our results from the OLS regressions show no relationship between having a child who has left the household and an individual's financial risk attitude. Similar results are obtained in the fixed effects regressions. Few previous studies have examined this life event on risk attitudes. However, Browne et al. (2022) found similar results to those obtained in our study.

Getting divorced, separating from a partner and entering widowhood

Our results from the OLS regressions show that when examining the entire sample as well as the subsample men, being divorced is associated with being more risk averse. The opposite results are obtained among men in the fixed effects regression. Christiansen et al. (2015) and Love (2010) found that getting divorced is associated with a higher degree of risk aversion among women, whilst men experience lower levels of risk aversion. The latter result is similar to our result from the fixed effects regressions. Although we do not find any significant results among women. Browne et al. (2022) and Van de Venter et al. (2012) also found no significant relationship between divorce and an individual's financial risk aversion.

In our main results, we found that separating from a domestic partnership is associated with being less risk averse for the entire sample as well as among women. Browne et al. (2022) also found a separation to be associated with a decrease in an individual's risk aversion.

Our main results suggest that risk aversion decreases among men when becoming a widower. In contrast, Love (2010) and Dohmen et al. (2011) found the opposite effect on risk aversion when an individual became widowed. Browne et al. (2022) on the other hand found that there is no link between an individual's risk attitude and becoming widowed.

7 Discussion

Our findings suggest that there seems to be a relationship between family status and financial risk attitudes. However, our results suggest that these differences do not stem from the actual family transitions. Possible reasons for our findings are multifold. In this part, we will provide a discussion of some of these reasons.

Many of the interviewed individuals in the DHS data set have only participated in the surveys a few times and not consistently over time. This unfortunately means that our data does not allow us to capture any anticipation effects of the studied life events. These effects might imply that individuals change their risk attitudes before the actual life event has taken place. The anticipation effects could potentially be most pronounced for planned life events, such as getting married, forming a domestic partnership, getting divorced, and separating from a partner. Although pregnancy cannot be predicted with certainty, having children could also be subject to anticipation effects. The parents might choose to change their risk attitudes in the meantime as they are attempting to conceive. Not being able to account for anticipation effects might explain why we have obtained insignificant results for the majority of the different life events' impact on risk attitude. Including lagged variables of the life events would, at least to some extent, enable us to control for anticipatory changes. As previously mentioned, this requires that the interviewed individuals participate consistently over time, which unfortunately has not been the case in our study.

When dealing with survey data, respondents may deliberately misreport certain answers when they are asked more sensitive questions regarding subjects such as income, gambling, or other types of questions related to money. The trustworthiness of the data could in that case be affected, leading to biased results with an over-or underestimation of the dependent variables. In our case, it is only a subject of speculation whether there is a problem of a downward or an upward bias in our analysis of a specific life event. For example, entering parenthood may suffer from systematic measurement errors. The reason for this could be that when first-time parents are asked about their financial risk attitudes, there might be a tendency of reporting even higher levels of risk aversion compared to their actual standpoint (this could be due to societal expectations of providing security to their children). This will in turn lead to an upward bias of the results obtained for the life event entering parenthood. Once again, this reasoning is only speculative. One way to

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overcome this issue is to investigate individuals' actual behavior, and not solely attitudes. This leads us to the next critical aspect of our data, i.e., the measurement used to determine individuals' financial risk attitudes. In this study, we have investigated individuals' self-assessed risk attitudes, which can differ from their actual risk-taking behaviors. Although some studies have shown that risk attitudes reflect risk behaviors (see discussion in section 3.1.1), there is still no clear consensus on this topic. For example, Kochaniak & Ulman (2020) showed that risky assets were primarily possessed by households who had a perception of themselves being risk averse. Since our measurement for financial risk-taking is based on individuals' perception of their attitudes, their actual investments and saving decisions might therefore differ from the reported risk attitudes.

Furthermore, restricted choices with questions that are closed-ended (for example Likert-type questions), might force the respondents to choose the most relevant answer even though it may not accurately reflect the reality. This can in turn lead to unreliable estimates and one should be cautious when interpreting the results obtained in this study.

Another limitation of the data is the lack of information about the household's current income. The only reliable variable including household income is based on the total net household income reported for the year prior to the survey year. Furthermore, this variable is measured on an 11-point scale, which results in a loss of precision. Since income is an important determinant of an individual's risk attitude, a more precise measurement would have been preferred in order to obtain more accurate estimations in this study.

As mentioned, the DHS data is conducted on a year-by-year basis. Using survey data based on annual answers might prevent us from revealing changes in the individuals' financial risk attitude. This is especially a problem if adaptation effects are not long-lasting, i.e., if the change in risk attitude due to a particular life event only is temporary. For example, if the adaptation effects only last for a short period of time and a life event took place some months before, then any changes in the financial risk attitude might have disappeared by the time the survey was conducted. In this case, we would not be able to observe any changes in risk attitude.

Furthermore, the estimates obtained in this study only reflect the average treatment effect on the treated and not the average treatment effect. For example, we can only estimate how marriage affects the financial risk attitude among those who got married. Furthermore, the results may also suffer from endogeneity bias. Whether an individual

experiences a particular life event or not could be correlated with the individual's observed and unobserved characteristics. Certain personality characteristics might have a higher probability of experiencing a certain life event than others. No estimations and conclusions about the population in general can therefore be drawn.

An important thing to highlight is that our findings presumably are affected by the context in which the study has been performed. Cultural differences might play an important role when determining individuals' risk attitudes and behaviors. Additionally, national laws and regulations might also influence individuals' trust and risk attitudes. Since our estimates are based on a representative sample of the Dutch population, it is questionable whether our findings could apply to other contexts. The external validity of this study might therefore be threatened, meaning that the estimated effects cannot be generalized to other populations.

Overall, some of the studied life events show a significant impact on individuals' risk attitudes. However, the sensitivity analysis conducted show that none of the life events have a significant impact on individuals' risk attitudes. This would indicate that the results obtained are dependent on which outcome variable that is used in the analysis. Hence, we cannot conclude that there are any changes in risk attitude when an individual experiences a certain life event.

8   Conclusion

In this thesis, we have studied the impact of a change in family structure on financial risk attitude. The family transitions considered in this study are getting married, forming a domestic partnership, entering parenthood, children leaving the household, getting divorced, separating from a partner, and entering widowhood. The study has been conducted using longitudinal data from De Nederlandsche Bank Household Survey, DHS, spanning the time period 1993 - 2021. Fixed effects regressions have been conducted to estimate the effect of these life events on financial risk attitude.

Some of the studied life events show a significant impact on individuals' risk attitudes. More precisely, we find that getting divorced and entering widowhood is associated with a decrease in financial risk aversion among men. Similarly, separating from a partner is associated with a decrease in financial risk aversion. This negative effect is most pronounced among women. Hence, we only found significant changes in the risk attitude when examining undesirable life events. This might indicate that an individual is more greatly affected by negative life events than positive or neutral life events. The sensitivity analysis, however, showed no significant effects. This would indicate that the results obtained are dependent on which outcome variable is used in the analysis. Hence, we cannot conclude that there are any changes in risk attitude when an individual experiences a certain life event.

Finally, further research is needed on this topic to determine whether financial risk attitudes change through changes in family structure. As a suggestion, including anticipation effects through lagged variables, would give more insight into whether, and to what degree, financial risk attitudes change through changes in family structure.

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9 Appendix

Table A1: Description of variables

Variable	Definition
Dependent variables	
Risk measure	Scale from 1 to 7 (1): risk-seeking (7): risk-averse
Aggregated risk measure	Sum of all six risk measures
Life events	
Got married	Individual got married
Formed partnership	Individual formed domestic partnership
Entered parenthood	Individual became a parent for the first time
Got divorced	Individual got a divorce
Entered widowhood	Individual became a widow
Got separated	Individual separated from domestic partnership
First child moved out	First child left household
Last child moved out	Last child left household
Civil status	
Married	Individual is married
In a domestic partnership	Individual lives in domestic partnership
Parent	Individual is a parent
Divorced	Individual is divorced
Separated	Individual is separated
Widowed	Individual is widowed
First child has moved out	The first child have moved out of the household
Last child has moved out	The last child have moved out of the household
Independent variables	
Age	Age of individual
Net household income	Yearly net household income with scale from 1 to 11 with: (1): Less than €8,000 and (11): More than €75,000
Education level	scale from 1 to 3 with: (1): Primary education, (2): Secondary education and (3): Academic
Subjective health	Scale from 1 to 5 with: (1): Excellent health status and (5): Poor health status
Height	Height of individual in centimeters
Gender	(0) Individual is male (1) Individual is female

Notes: All variables in the categories *life events* and *civil status* are dummy variables where (1) indicates that the life event has happened respective which civil status group the individual belongs to.

Table A2: Summary statistics for life events

Variable	Gender	Mean	Std. dev.	Min	Max	Obs
Desirable life events						
	Men	0.016	0.13	0	1	22,537
Got married	Women	0.016	0.12	0	1	18,268
	All	0.016	0.13	0	1	40,805
	Men	0.012	0.11	0	1	22,537
Formed partnership	Women	0.014	0.12	0	1	18,268
	All	0.013	0.11	0	1	40,805
	Men	0.014	0.12	0	1	20,278
Entered parenthood	Women	0.016	0.12	0	1	16,182
	All	0.015	0.12	0	1	36,460
Undesirable life events						
	Men	0.0033	0.058	0	1	22,537
Got divorced	Women	0.0031	0.055	0	1	18,268
	All	0.0032	0.057	0	1	40,805
	Men	0.0043	0.065	0	1	22,537
Entered widowhood	Women	0.0041	0.064	0	1	18,268
	All	0.0042	0.065	0	1	40,805
	Men	0.015**	0.12	0	1	22,537
Got separated	Women	0.017**	0.13	0	1	18,268
	All	0.016	0.12	0	1	40,805
Neutral life events						
	Men	0.038***	0.19	0	1	27,254
First child moved out	Women	0.028***	0.16	0	1	22,664
	All	0.033	0.18	0	1	49,918
	Men	0.0072	0.085	0	1	25,411
Last child moved out	Women	0.0082	0.090	0	1	21,263
	All	0.0077	0.087	0	1	46,674

Notes: p-values from t-tests for differences in means between men and women are shown above.

*** p<0.01, ** p<0.05, * p<0.1

Table A3: Matrix of correlations - OLS model specification

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Married	1.0000													
In a domestic partnership	-0.4837	1.0000												
Parent	0.4256	-0.2382	1.0000											
Divorced	-0.3551	-0.0822	0.0634	1.0000										
Widowed	-0.3189	-0.0738	0.0918	-0.0542	1.0000									
Separated	-0.0079	-0.0444	-0.0894	0.0034	-0.0110	1.0000								
First child has moved out	0.0296	-0.0318	0.1260	0.0385	0.0301	-0.0098	1.0000							
Last child has moved out	0.0340	-0.0202	0.0619	0.0071	-0.0057	-0.0059	0.0428	1.0000						
Age	0.1636	-0.2835	0.3552	0.0592	0.2594	-0.1101	0.0904	0.0187	1.0000					
Income	0.2418	0.0892	0.0704	-0.1725	-0.1302	0.0115	-0.0165	0.0156	-0.0482	1.0000				
Education	-0.0908	0.0776	-0.0997	-0.0163	-0.0432	0.0281	-0.0304	0.0092	-0.0916	0.2203	1.0000			
Health	-0.0585	-0.0523	0.0124	0.0619	0.0769	-0.0117	0.0182	-0.0024	0.1452	-0.1565	-0.0785	1.0000		
Height	0.0293	0.0437	-0.0429	-0.0636	-0.0876	0.0169	-0.0075	-0.0050	-0.1290	0.1359	0.1189	-0.0729	1.0000	
Gender	-0.0896	0.0284	-0.0061	0.0711	0.0755	0.0089	-0.0158	0.0068	-0.1278	-0.0722	-0.0639	0.0478	-0.6541	1.0000

Table A4: Matrix of correlations - FE model specification

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Got married	1.0000												
Formed partnership	-0.0152	1.0000											
Entered parenthood	0.1056	0.0174	1.0000										
Got divorced	-0.0073	-0.0064	0.0033	1.0000									
Entered widowhood	-0.0088	-0.0077	-0.0038	-0.0037	1.0000								
Got separated	0.0044	-0.0150	0.0794	-0.0072	0.0278	1.0000							
First child moved out	-0.0070	0.0062	-0.0032	0.0266	0.0080	-0.0091	1.0000						
Last child moved out	-0.0104	-0.0056	-0.0060	0.0063	-0.0017	-0.0078	0.0411	1.0000					
Having dependent children	-0.0197	-0.0168	-0.0209	0.0061	-0.0047	-0.0239	0.2111	0.0633	1.0000				
Age	-0.0842	-0.0915	-0.0864	-0.0286	0.0691	-0.1202	0.0852	0.0141	0.0929	1.0000			
Income	0.0227	-0.0073	0.0060	-0.0044	-0.0076	0.0244	-0.0151	0.0195	0.0028	-0.0390	1.0000		
Education	0.0179	0.0265	0.0109	0.0070	-0.0060	0.0251	-0.0335	0.0096	-0.0315	-0.0976	0.2223	1.0000	
Health	-0.0147	-0.0119	-0.0224	0.0089	0.0289	-0.0166	0.0162	-0.0044	0.0324	0.1375	-0.1612	-0.0809	1.0000

Table A5: Attrition 1993 - 2000

	Time period 1993 - 2000						
Variable	**1993-1994**	**1994-1995**	**1995-1996**	**1996-1997**	**1997-1998**	**1998-1999**	**1999-2000**
Civil status							
Married	-	-0.0194	-0.0274	0.0153	0.0218	-0.2006	-0.2035
	-	(0.1030)	(0.1057)	(0.1148)	(0.1334)	(0.1396)	(0.1613)
In a domestic partnership	-	0.1224	0.0625	-0.0303	0.0671	0.0726	-0.0512
	-	(0.1569)	(0.1198)	(0.1338)	(0.1573)	(0.1697)	(0.1917)
Parent	-	-0.0847	-0.0300	-0.0146	0.0044	0.0019	-0.1064
	-	(0.0996)	(0.0710)	(0.0753)	(0.0940)	(0.1047)	(0.1203)
Divorced	-	-0.3089	-0.1082	0.2702	0.2537	0.0425	0.0829
	-	(0.2468)	(0.1681)	(0.1656)	(0.1915)	(0.2060)	(0.2433)
Widowed	-	0.2572	0.1390	0.2107	0.1441	-0.0075	0.1554
	-	(0.2296)	(0.1666)	(0.1723)	(0.1936)	(0.1988)	(0.2418)
Separated	-	-0.3782	0.0746	0.7154	0.6889	0.0607	0.0357
	-	(0.5939)	(0.3848)	(0.4974)	(0.6810)	(0.7638)	(0.7814)
Control variables							
Age	-	-0.0115***	-0.0114***	-0.0097***	-0.0077**	0.0003	0.0021
	-	(.0035)	(0.0026)	(0.0027)	(0.0032)	(0.0036)	(0.0041)
Net household income	-	-0.0088	0.0607***	0.1276***	0.0898***	0.0351*	0.0473*
	-	(0.0195)	(0.0149)	(0.0168)	(0.0190)	(0.0205)	(0.0252)
Education level	-	-0.4843***	-0.5648***	-0.6962***	-0.6348***	-0.6753***	-0.8391***
	-	(0.0882)	(0.0660)	(0.0691)	(0.0676)	(0.0713)	(0.0891)
Subjective health	-	0.0074	-0.0131	0.0092	0.0794*	0.0726	0.0150
	-	(0.0473)	(0.0361)	(0.0384)	(0.0456)	(0.0512)	(0.0615)
Height	-	0.0005	0.0018	0.0060	0.0052	0.0036	0.0063
	-	(0.00532)	(0.0039)	(0.0041)	(0.0048)	(0.0053)	(0.0062)
Gender	-	0.0419	0.0496	0.0843	0.0797	0.0358	0.0222
	-	(0.1000)	(0.0732)	(0.0764)	(0.0897)	(0.1005)	(0.1203)
Constant	-	0.9927	0.3310	-0.6046	-0.6523	-0.1197	-0.1166
	-	(0.7365)	(0.7458)	(0.7767)	(0.9085)	(1.0026)	(1.1787)
Observations	-	1,652	2,861	2,437	1,767	1,382	965
R^2	-	0.0315	0.0353	0.0597	0.0441	0.0389	0.0656

*** p<0.01, ** p<0.05, * p<0.1

Table A6: Attrition 2000 - 2010

Variable	Time period 2000 - 2010									
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Civil status										
Married	-0.7066***	-0.3076**	-0.0081	-0.1202	-0.0848	-0.0332	0.1281	0.2677**	-0.1069	-0.1999
	(0.2126)	(0.1529)	(0.1384)	(01281)	(0.1243)	(0.1309)	(0.1282)	(0.1303)	(0.1359)	(0.1425)
In a domestic partnership	-0.2056	-0.2112	-0.0633	0.1248	0.2721**	0.2221	0.0002	-0.0512	-0.0171	-0.1295
	(0.2352)	(0.1783)	(0.1545)	(0.1374)	(0.1340)	(0.1397)	(0.1461)	(0.1501)	(0.1542)	(0.1628)
Parent	0.1254	0.0767	0.0017	-0.0012	-0.0521	-0.0651	-0.0734	0.0080	0.1680	0.1382
	(0.1599)	(0.1132)	(0.1034)	(0.0974)	(0.0936)	(0.0961)	(0.0931)	(0.0920)	(0.1037)	(0.1140)
Divorced	-0.1872	0.1464	.0688	-0.0432	-0.0439	0.0064	0.0930	0.1198	-0.1751	-0.2187
	(0.2929)	(0.2182)	(0.2156)	(0.1831)	(0.1743)	(0.1770)	(0.1735)	(0.1734)	(0.1784)	(0.1945)
Widowed	-0.2158	0.1254	0.3834	0.1388	-0.1784	-0.2122	0.2421	0.6222***	0.1454	-0.0865
	(0.3449)	(0.2786)	(0.2650)	(0.2387)	(0.2466)	(0.2416)	(0.2029)	(0.1902)	(0.1992)	(0.2097)
Separated	0.2643	0.0710	-	.3000	0.4937	-	-	1.1640**	0.6046	0.3294
	(0.6595)	(0.5902)	-	(0.3831)	(0.4111)	-	-	(0.5021)	(0.4401)	(0.6684)
Control variables										
Age	0.0052	-0.0035	-0.0097***	-0.0076**	-0.0043	-0.0027	-0.0076***	-0.0121***	-0.0090***	-0.0048
	(0.0045)	(0.0033)	(0.0031)	(0.0030)	(0.0029)	(0.0028)	(0.0027)	(0.0027)	(0.0029)	(0.1359)
Net household income	0.0041	0.0256	0.0437*	0.0013	-0.0230	-0.0033	0.0109	-0.0118	-0.0292	-0.0112
	(0.0313)	(0.0242)	(0.0224)	(0.0189)	(0.0175)	(0.0180)	(0.0175)	(0.0176)	(0.0196)	(0.0032)
Education level	-0.6181***	-0.1184*	0.0837	0.0105	0.0090	-0.1009	-0.0839	0.0382	0.0443	0.0246
	(0.0639)	(0.0662)	(0.0651)	(0.0639)	(0.0620)	(0.0611)	(0.0590)	(0.0594)	(0.0631)	(0.0210)
Subjective health	-0.0317	-0.0812	0.0042	0.0528	-0.0665	-0.0336	0.1077**	0.1529***	0.1351***	0.0686
	(0.0850)	(0.0635)	(0.0546)	(0.0453)	(0.0468)	(0.0473)	(0.0443)	(0.0449)	(0.0467)	(0.0668)
Height	0.0044	0.0070	-0.0013	-0.0013	0.0058	0.0025	0.0033	-0.0003	-0.0069	-0.0014
	(0.0078)	(0.0055)	(0.0051)	(0.0048)	(0.0046)	(0.0046)	(0.0045)	(0.0046)	(0.0051)	(0.0513)
Gender	0.0032	0.0624	-0.0358	0.0875	0.2597***	0.1329	0.0852	0.0434	0.0006	0.0232
	(0.1493)	(0.1102)	(.1000)	(0.0918)	(0.0880)	(0.0876)	(0.0835)	(0.0852)	(0.0934)	(0.0055)
Constant	-0.6292	-2.0581*	-1.1993	-0.8093	-1.8297	-1.2788	-1.5930*	-1.0637	0.2322	-0.8537
	(1.478)	(1.0586)	(0.9764)	(0.9238)	(0.8756)	(0.8866)	(0.8686)	(0.8761)	(0.9873)	(1.0704)
Observations	1,161	2,209	2,689	2,832	2,934	2,976	2,948	2,817	2,579	2,448
R^2	0.0773	0.0145	0.0134	0.0153	0.0240	0.0107	0.0105	0.0227	0.0177	0.0059

*** p<0.01, ** p<0.05, * p<0.1

Table A7: Attrition 2010 - 2021

Variable	Time period 2010 - 2021										
	2010-2011	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**2020-2021**
Civil status											
Married	-0.0467	-0.1123	-0.1333	-0.1234	-0.0016	0.1162	-0.0212	0.0042	0.0162	-0.2170**	-0.2465**
	(0.1568)	(0.1582)	(0.1447)	(0.1293)	(0.1280)	(0.1280)	(0.1169)	(0.1108)	(0.1079)	(0.0995)	(0.1141)
In a domestic partnership	-0.1280	-0.1323	0.0310	0.1369	0.1533	0.0343	-0.0781	0.0227	0.0766	-0.0860	-0.1165
	(0.1852)	(0.1798)	(0.1576)	(0.1418)	(0.1412)	(0.1431)	(0.1280)	(0.1194)	(0.1180)	(0.1121)	(0.1310)
Parent	0.0777	0.1534	0.0598	0.0842	0.0635	-0.0354	0.1066	0.1273	0.1680	0.2156***	0.2200**
	(0.1151)	(0.1144)	(0.1031)	(0.0922)	(0.0883)	(0.0894)	(0.0857)	(0.0791)	(0.0793)	(0.0773)	(00891)
Divorced	0.1655	0.2209	0.0066	-0.1001	0.1973	0.2563	-0.0123	0.0193	0.1695	-0.0889	-0.3334**
	(0.2001)	(0.1949)	(01868)	(0.1766)	(0.1674)	(01697)	(0.1598)	(0.1464)	(0.1405)	(0.1321)	(0.1575)
Widowed	0.0262	-0.1810	-0.1938	-0.1159	0.1059	-0.0068	-0.1951	0.0714	0.3266**	0.0891	-0.1072
	(0.2291)	(0.2441)	(0.2219)	(0.1854)	(0.1794)	(0.1868)	(0.1739)	(0.1624)	(0.1626)	(0.1544)	(0.1772)
Separated	0.5339	-	-	0.4190	-0.1323	-0.3052	0.2458	0.5221*	0.2303	-	-
	(0.6761)	-	-	(0.3831)	(0.5526)	(0.4944)	(0.3688)	(0.2862)	(0.4401)	-	-
Control variables											
Age	-0.0068*	-0.0139***	-0.0092***	-0.0019	-0.0064***	-0.0074***	-0.0063***	-0.0048**	-0.0044*	-0.0072***	-0.0075***
	(0.0035)	(0.0035)	(0.0030)	(0.0026)	(0.0025)	(0.0025)	(0.0024)	(0.0023)	(0.0023)	(0.0022)	(0.0025)
Net household income	0.0386*	0.0307	0.0040	-0.0286	-0.0240	-0.0074	-0.0162	0.0060	0.0096	-0.0009	-0.0076
	(0.0225)	(00222)	(0.0201)	(0.0174)	(0.0171)	(00179)	(0.0164)	(0.0154)	(0.0149)	(0.0139)	(0.0156)
Education level	-0.0141	0.0023	0.0040	0.0060	-0.0681	-0.1024*	-0.0180	0.0212	0.0183	-0.0380	-0.0526
	(0.0684)	(0.0701)	(0.0690)	(0.0614)	(0.0588)	(0.0608)	(0.0569)	(0.0561)	(0.0571)	(0.0546)	(0.0646)
Subjective health	0.0361	0.0742	0.1173**	0.1078**	0.0758*	0.0664	0.0360	0.0522	0.0837**	0.1010***	0.1070**
	(0.0560)	(0.0535)	(0.0496)	(0.0441)	(0.0425)	(0.0423)	(0.0401)	(0.0376)	(0.0362)	(0.0365)	(0.0454)
Height	-0.0036	-0.0079	-0.0070	0.0012	-0.0010	-0.0095**	-0.0067	-0.0009	0.0041	0.0036	0.0014
	(0.0057)	(0.0058)	(0.0054)	(0.0045)	(0.0044)	(0.0046)	(0.0044)	(0.0042)	(0.0042)	(0.0041)	(0.0049)
Gender	0.0049	-0.1109	-0.0316	0.1223	-0.0238	-0.0254	0.0824	0.0923	0.1065	0.0892	0.0477
	(0.1116)	(0.1128)	(.1009)	(0.0867)	(0.0847)	(0.0860)	(0.0823)	(0.0804)	(0.0799)	(0.0779)	(0.0943)
Constant	-0.7460	0.3655	-0.1822	-1.4018	-0.5923	0.8689	0.2991	1.112	-2.1982***	-1.6482**	-1.3927
	(1.1292)	(1.1403)	(1.0606)	(0.8865)	(0.8514)	(0.8961)	(0.8498)	(0.8061)	(0.8087)	(0.7883)	(0.9173)
Observations	2,468	2,511	2,526	2,782	3,159	3,300	3,322	3,336	3,544	3,754	3,644
R^2	0.0080	0.0206	0.0158	0.0118	0.0097	0.0128	0.0117	0.0075	0.0096	0.0146	0.0152

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A8: Full regression: Fixed Effects Regressions

| | Fixed Effects | | |
| | (1) | (2) | (3) |
Variable	**Men**	**Women**	**All**
Desirable life events			
Got married	-0.0019	0.1013	0.0380
	(0.0590)	(0.0923)	(0.0763)
Formed partnership	-0.0590	-0.0432	-0.0531
	(0.0579)	(0.0682)	(0.0445)
Entered parenthood	0.0133	0.0201	0.0179
	(0.0514)	(0.0753)	(0.0435)
Undesirable life events			
Got divorced	-0.1906*	-0.0091	-0.1152
	(0.1071)	(0.1227)	(0.0805)
Entered widowhood	-0.1589**	0.0474	-0.0780
	(0.0790)	(0.1187)	(0.0673)
Got separated	-0.0658	-0.1748*	-0.1127*
	(0.0809)	(0.0924)	(0.0608)
Neutral life events			
First child moved out	0.0018	0.0549	0.0236
	(0.0334)	(0.0357)	(0.0247)
Last child moved out	-0.0857	0.0007	-0.0501
	(0.0697)	(0.0673)	(0.0487)
Control variables			
Income			
2	0.0393	0.0447	0.0458
	(0.1348)	(0.1234)	(0.0911)
3	-0.0921	0.0376	-0.0205

(Continued on next page)

	Fixed Effects		
	(1)	(2)	(3)
Variable	**Men**	**Women**	**All**
	(0.1202)	(0.0977)	(0.0759)
4	-0.0406	0.0651	0.0211
	(0.1168)	(0.0832)	(0.0697)
5	-0.0180	0.0050	0.0006
	(0.1057)	(0.0806)	(0.0647)
6	-0.1325	-0.0366	-0.0824
	(0.1020)	(0.0757)	(0.0618)
7	-0.0824	-0.0705	-0.0676
	(0.1023)	(0.0748)	(0.0616)
8	-0.0845	-0.0640	-0.0658
	(0.1018)	(0.0762)	(0.0617)
9	-0.0768	-0.0796	-0.0715
	(0.1051)	(0.0800)	(0.0642)
10	-0.1064	-0.0696	-0.0821
	(0.1103)	(0.0854)	(0.0682)
11	-0.0846	-0.0164	-0.0490
	(0.1254)	(0.1167)	(0.0839)
Education			
2	-0.0088	0.0585	0.0269
	(0.1345)	(0.1115)	(0.0918)
3	-0.0313	-0.0866	-0.0562
	(01406)	(0.1149)	(0.0956)
Health			
2	-0.0448*	-0.0020	-0.0277
	(0.0271)	(0.0311)	(0.0208)
3	-0.1035***	-0.0007	-0.0606**

	Fixed Effects		
	---	---	---
	(1)	(2)	(3)
Variable	**Men**	**Women**	**All**
	(0.0358)	(0.0394)	(0.0267)
4	-0.1664***	0.0454	-0.0808*
	(0.0550)	(0.0632)	(0.0420)
5	-0.1152	0.1364	-0.0386
	(0.1433)	(0.2021)	(0.1170)
Year controls	Yes	Yes	Yes
Constant	3.6759	-0.6062	3.0790
	(0.6849)	(0.3511)	(0.4966)
Observations	15,779	11,991	27,770
Individuals	2,892	2,580	5,472
R^2	0.0345	0.0348	0.0311

Notes: Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

R^2 indicates the within measure.

Table A9: Full regression: Robustness check

| | Fixed Effects | | |
| | (1) | (2) | (3) |
Variable	**Men**	**Women**	**All**
Desirable life events			
Got married	-0.0019	0.1013	0.0380
	(0.0590)	(0.0923)	(0.0763)
Formed partnership	-0.0590	-0.0432	-0.0531
	(0.0579)	(0.0682)	(0.0445)
Entered parenthood	0.0133	0.0201	0.0179
	(0.0514)	(0.0753)	(0.0435)
Undesirable life events			
Got divorced	-0.1906*	-0.0091	-0.1152
	(0.1071)	(0.1227)	(0.0805)
Entered widowhood	-0.1589**	0.0474	-0.0780
	(0.0790)	(0.1187)	(0.0673)
Got separated	-0.0658	-0.1748*	-0.1127*
	(0.0809)	(0.0924)	(0.0608)
Neutral life events			
First child moved out	0.0018	0.0549	0.0236
	(0.0334)	(0.0357)	(0.0247)
Last child moved out	-0.0857	0.0007	-0.0501
	(0.0697)	(0.0673)	(0.0487)
Control variables			
Income			
2	-0.0288	0.0228	-0.0069
	(0.1130)	(0.1195)	(0.0825)
3	-0.0076	-0.0334	-0.0244

Table A9 – continued from previous page

	Fixed Effects		
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	(1)	(2)	(3)
Variable	Men	Women	All
	(0.1121)	(0.1058)	(0.0774)
4	-0.0236	0.1247	0.0555
	(0.1029)	(0.0928)	(0.0697)
5	0.0725	0.0108	0.0413
	(0.0930)	(0.0831)	(0.0624)
6	-0.0521	0.0255	-0.0171
	(0.0888)	(0.0854)	(0.0617)
7	-0.0339	0.0002	-0.0204
	(0.0874)	(0.0807)	(0.0595)
8	-0.0032	0.0081	0.0012
	(0.0864)	(0.0829)	(0.0598)
9	0.0101	-0.0117	-0.0024
	(0.0888)	(0.0863)	(0.0619)
10	0.0092	0.0282	0.0156
	(0.0947)	(0.0924)	(0.0662)
11	0.0054	0.1047	0.0407
	(0.1185)	(0.1125)	(0.0837)
Education			
2	-0.0902	0.0094	-0.0192
	(0.1240)	(0.1395)	(0.0967)
3	-0.0945	-0.1394	-0.0976
	(0.1296)	(0.1517)	(0.1020)
Health			
2	-0.0321	0.0072	-0.0166
	(0.0247)	(0.0324)	(0.0197)
3	-0.0680**	-0.0076	-0.0441*

(Continued on next page)

	Fixed Effects		
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	(1)	(2)	(3)
Variable	**Men**	**Women**	**All**
	(0.0329)	(0.0411)	(0.0257)
4	-0.0845*	0.0435	-0.0322
	(0.0494)	(0.0591)	(0.0382)
5	-0.2218*	0.0482	-0.1295
	(0.1315)	(0.1582)	(0.1052)
Year controls	Yes	Yes	Yes
Constant	3.6759	-0.6062	3.0790
	(0.6849)	(0.3511)	(0.4966)
Observations	15,779	11,991	27,770
Individuals	2,892	2,580	5,472
R^2	0.0345	0.0348	0.0311

Notes: Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

R^2 indicates the within measure.