The effect of job insecurity on having children

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Summary

The last few years the labor market has changed drastically. In most of the western world the number of flexible workers has increased. These group of workers are likely to suffer from job insecurity. Job insecurity itself has immense negative consequences for the people that experience it, it could lead to mental problems and sometimes even to a certain extent to physical problems (Nella et al., 2015). But it could also affect other areas of the human life as well, such as the decision whether or not to get married (Nella et al., 2015). Because of the fact that this group of flex workers in the recent years has increased tremendously the negative effects of job insecurity have become more important (CBS, 2021). More people are affected by it, yet the true effect of job insecurity is still largely unknown. Except for the immense psychological and physical problems, little is known about what job insecurity even more affects.

Next to that, are there other problems that arose in the recent years, one of which is the graying of the society. This phenomena pressures the current labor force as well as the current fiscal regulations. Furthermore, does it have an enormous effect on the supply of labor. In addition, does it have (potentially) negative consequences for productivity and economic growth (Grant & Hoorens, 2007). When the fertility rate decreases potential problems to the welfare state can arise. Moreover, fertility has an effect on the tax and public finance system. Increasing the labor force, or at least the potential supply of the labor force, could deal with the problem of the graying of the society (Bloom et al., 2010). If there were for example an effect of job insecurity on having children, the government can try to influence the job insecurity experienced by people in order to ensure that people will have more children. This will increase the (potential) labor supply. So the government could make policy if there were to be an effect of job insecurity on having children. Resulting into the fact that family planning seems to be an important aspect to be studied.

Regarding the topic of job insecurity and having children some research has been done. However the research done has been somewhat limited in that it only looked at specific countries, i.e. France. Next to that is most of the research that has been done quite old or dated. Furthermore, the results from the previous research do not coincide, but are rather inconsistent or conflicting. Finally, the fact that this topic is fairly new to the science world combined with the scarce amount of research that is currently available is another cause to do this research.

The goal of this study is to explain to what extent the job insecurity of a worker affects him or her having children. In order to assess the potential relationship between job insecurity and having children the following research question was formulated: *To what extent does a worker's job insecurity affect him or her having children?* In order to answer the research question, data about Dutch citizens was used that was provided by the research institute CentErdata through the Longitudinal Internet Studies for the Social Sciences panel data (LISS panel data) for a period of 8 years, while taking other relevant factors, like income, education and age, as well as year fixed effects and individual fixed effects into account. By looking at such a period of time this study is one of the first studies that looked at the potential effect of job insecurity on having children for a longer period of time, so the effect in the medium-term, potentially even the effect in long-term, of job insecurity on having children. Moreover, this study made estimates for females and males and for married people as well. As a way to further differentiate between other studies done on this topic this study also looked at the potential effect of job insecurity on the intention to have children in the future and how many children people would want in the future.

When controlling for year fixed effects, individual fixed effects, income, education and age job insecurity seems to not affect whether or not people have children. There is no statistically significant effect between job insecurity and having children for these observations of these Dutch citizens that are obtained from the LISS panel. Furthermore, is there also no statistically significant effect between job insecurity and having children for females or males separately or for married people. Moreover, is there also no statistically significant effect between job insecurity and the intention to have children in the future or the number of children people would want in the future. Meaning that job insecurity does not affect whether or not a worker will have children, the intention to have children in the future or the number of children people would want in the future. As a consequence this study failed to reject any of the null hypotheses (H0) and found no statistically significant effect at all.

Based on the findings of this study, this study recommends to the government that when making policy regarding of these two aspects the main focus should not be on this possible relationship, yet the government should take this possible relationship into consideration, given other work done on this topic.

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1. Introduction

The last few years the labor market has changed drastically. In most of the western world the number of flexible workers has increased. When looking at Europe as a whole one can see that in the beginning of the 2000s The European Union made several policies and directives regarding flexible contracts. At that time the main goal was to promote more flexible contracts and more flexible work. As a consequence more flexible contracts and flexible employees were present in the member states. Ergo, in 2017 30% of the workforce in Europe was a flex worker (OECD, 2016). If one zooms further in, on for example The Netherlands, one can see a tremendous increase in the number of flex contracts, flex employees and the self-employed. In the period of 2003 until 2020 the fraction of flex workers as a part of the total workers increased from 8% to 13%, these are 514.000 flex workers. In 2003 there were around 1.1 million flex workers, while in 2020 there were around 1.6 million flex workers. So the number of flex workers increased with roughly 45% in the period between 2003 and 2020, if one looks at the increase of new versus old flex workers (CBS, 2021). This makes The Netherlands the fastest growing member state in the European Union with regards to the flexible labor market (Haars, 2019). Furthermore, The Netherlands is one of the leading countries when it comes to policies regarding flexible contracts. As a result, the Dutch government cannot learn or at the very least learn less from other countries about policy regarding flex contracts (MichaelPage, n.d.). This makes it efficacious to look at The Netherlands in particular. In The Netherlands many sectors of the labor market switched from fixed contracts to more flexible workers, in the way of more temporary contracts and more self-employed. These people are hired on base of a certain time period or a certain job that needs to be performed, i.e. a project that needs to be carried out. When the time period is exceeded and/or the project is (successfully) finished, this person then has to find a new job again (CBS, 2021; Nella et al., 2015). This creates instability for this group of people. In turn this will create a certain feeling of job insecurity. Job insecurity itself has immense negative consequences for the people that experience it, it could lead to mental problems and sometimes even to a certain extent to physical problems. But it could also affect other areas of the human life as well, such as the decision whether or not to get married (Nella et al., 2015).

Seeing as this group of flex workers in the recent years, due to labor market changes, has increased tremendously the negative effects of job insecurity have become more important (CBS, 2021). More people are affected by it, yet the true effect of job insecurity is still largely unknown. Except for the immense psychological and physical problems, little is known about

what job insecurity even more affects. For example, if and to what extent does job insecurity effect whether or not people will have children.

When looking at the graying of the society in Europe one can yet again see an increase. Due to among others a healthier lifestyle and medicine people can live longer. Combined with the fact that there are more older people, as a fraction of the total population, partly due to the baby boom. Europe experienced a graying of its society. On average 1 in 3 people will be over 65, while 10 years ago this was 1 in 5 people. Furthermore, will 1 in 10 people be over 80 years old, while 10 years ago this was 1 in 15 people. Moreover, does Europe have on average 22% people over the age of 65 (Creighton, 2014). If one looks at The Netherlands one can see almost 3.4 million people over the age of 65 and 19.5% as a fraction of the total population. In the beginning of the 1900s there were 300.000 people over the age of 65, while in present day there are 3.4 million, this is a more than tenfold increase. Furthermore, the number of people above the age of 80 has also increased and currently make up for 4.7% of the total population (CBS, n.d.).

Hence in the recent years the graying of the society has become a growing problem, pressuring the current labor force as well as the current fiscal regulations (Grant & Hoorens, 2007). Next to that, does it have an enormous effect on the supply of labor. Older people, especially the elderly, tend to have less or none children leading to a decrease and potential lack of the labor supply. Moreover, in present day have people less children than in the past. So on one hand the labor supply decreases due to more people exiting the labor force, while on the other hand less people are entering the labor force (Barr, 2020). Furthermore, does it have (potentially) negative consequences for productivity and economic growth (Grant & Hoorens, 2007). Moreover, when the fertility rate decreases, meaning less children, potential problems to the welfare state can arise. Fertility has an effect on the tax and public finance system. When the working population decreases, especially in countries where the tax system rests on the working population, problems can arise with regards to the financing of, for example, pension benefits and healthcare benefits. These benefits become more expensive, because less people pay for it (the decreased working population). This effect is even further increased when the people that need these benefits increase, as is the case with the graying of the society (Barr, 2020). As a result the graying of the society is a problem many governments are dealing with. One solution to this problem is to increase the labor force and to achieve this people could have more children. However that might amplify the problem in the long run, as the group that needs the pension

benefits in the future grows so the then current labor force also needs to grow. All in all, family planning seems to be an important aspect (Grant & Hoorens, 2007).

Another reason why family planning is an important issue to look at, is that the Council of the European Union and the Ministers for Employment and Social Policy since the end of the 1990s put great emphasis on reconciliation of family life and work. European policymakers stimulate the implementation of regulations or measures like (more) flexible working hours or an increase in public childcare provisions and so on to help (especially) women to integrate their work or labor market position with having children (Ariza et al., 2003).

It is important to look at this because having children creates happiness for parents. But having children sometimes has an alternative motivation. Particularly in third world countries people will often have children in order for them to take care of them when they are old. Another reason why many people in third world countries have many offspring is to escape poverty, so their children can help their family with either household chores or with (often manual) labor. On the other hand, overpopulation is a problem that increasingly becomes more problematic. In order to tackle this problem China introduced a 1-child policy. So one can see that whether a person has children or not is affected by many aspects, some of which are in control of the person itself and some of which are outside the control of these people (Morgan & King, 2001).

As mentioned earlier little is known about the true effect of job insecurity and given the importance of family planning, it would be beneficial to know if there is a relationship between these two phenomena (Sverke & Hellgren, 2002). In order to assess the potential effect that job insecurity might have on fertility, the following research question has been formulated: *To what extent does a worker's job insecurity affect him or her having children?* In order to answer the research question, data will be used that is provided by the research institute CentErdata through the LISS panel data. The LISS panel provides data on over 5,000 Dutch households and over 7,500 Dutch individuals for more than 10 years. As a consequence of using the LISS panel data this study does look at this potential effects for Dutch citizens. The data obtained from the LISS panel will be examined using a statistical software called STATA. The goal of this study is to explain to what extent the job insecurity of a worker affects him or her having children. A foremost reason to look at The Netherlands, is due to the fact that this country has various and generous child benefits and support, which could potentially effect whether or not people have children. These child benefits and support could ensure that people are more likely to have

children, this makes it compelling to study whether or not in such a case job insecurity (still) has an effect on having children.

Regarding the scientific relevance some research has been done on the effect of job insecurity on having children. However the research done has been somewhat limited in that it only looked at specific countries, i.e. France, or the difference between certain areas, i.e. eastern Germany and western Germany. Next to that, is most of the research that has been done quite old or dated. Furthermore, the results from the previous research do not coincide, but are rather inconsistent or conflicting. For example, Clark and Lepinteur (2020) found that there is an effect of 3.9 percentage points of job insecurity on having children for workers in France, while Auer & Danzer (2015) found no significant effect for men in Germany. Finally, the fact that this topic is fairly new to the science world combined with the scarce amount of research that is currently available is another cause for the scientific relevance of this study. This can be seen by the multiple work of Sverke, Hellgren and Näswall in the beginning of the millennium, one of the main conclusions is to do more research on the effects that job security can have. Sverke & Hellgren (2002, pp.37-38) said: "In our view, more systematic research is needed also as to the consequences of job insecurity. We called for more longitudinal research to address issues of causality, long-term effects of insecurity, and its relative effects after controlling for other important factors". This statement thus further strengthens the scientific relevance this study has. All these reasons pose room for further and more elaborative research on the topic of job insecurity and having children. This study can gain more insights on the mechanisms behind the effect of job insecurity on having children.

An important aspect, next to scientific relevance, is practical relevance. Increasing the labor force, or at least the potential supply of the labor force, could deal with the problem of the graying of the society. If there is an effect of job insecurity on having children the government can try to influence the job insecurity experienced by people in order to increase the (potential) labor supply, i.e. more children. If there were no change in immigration a lower fertility rate decreases the long-run supply of labor and as a consequence will also reduce the tax base (Bloom et al., 2010). Furthermore, can lower fertility rates also cause problems for the retirement income and medical care, if they are partially financed via a pay-as-you-go system, i.e. taxes on the working population. This is especially a problem when the life expectancy rises, as is the case for The Netherlands (Clark & Lepinteur, 2020; Mackenbach et al., 2011). Moreover, are innumerable modern societies characterized by economic uncertainty as well as by a decreasing fertility rate, this imposes major problems on the welfare state. Even tough

research has tried to explain fertility patterns, only recently has research explored the role of (perceived) economic uncertainty on fertility outcomes (Hofmann and Hohmeyer, 2013).

Furthermore, the government has different roles. One of these roles is to promote the general welfare and wellbeing of their citizens (Fischer et al., 2007). Amongst the wellbeing of people is having children. If there were to be an effect of job insecurity on having children the government can try to influence this in order to increase the wellbeing of its citizens. Note, however, that there is a direct effect of job insecurity on wellbeing. Job insecurity and especially the increase of job insecurity has a negative effect on the (mental) wellbeing of people (Sverke & Hellgren, 2002). This does partly supersede the last reason for the practical relevance of this study, however this study does still hold practical relevance.

The next chapter is the theoretical framework, in which the key theoretical aspects and relationships between job insecurity and having children will be portrayed. These relationships will lead to hypotheses, with which this chapter will be concluded. Afterwards the methodology of this study will be presented. This chapter contains how the variables will be operationalized, the control variables that will be used and what kind of empirical analyses will be used. Following this, the results will be presented, this chapter contains the most important results obtained from the statistical analysis and will be presented with an according interpretation. The subsequent chapter is called ‘Discussion’ in which caveats of this study will be mentioned, recommendations for further research and some policy recommendations will be made. In the final chapter a conclusion will be given about the most important findings of this study.

2. Theoretical framework

2.1 Job insecurity

In order to be able to do research about job insecurity one needs to know the definition of job insecurity and all the relevant aspects that cover it. Sverke & Hellgren (2002, p.24) define job insecurity as: "a subjectively experienced stressor which may be divided into different dimensions". These dimensions are made out of the objective situation and subjective characteristics (Sverke & Hellgren, 2002).

The objective situation is made out of four different aspects, the labor market characteristics, the organizational change, the employment contract and the uncertain future for the organization. The labor market characteristics contain all the relevant aspects of the labor market, for example the type of job, i.e. seasonal or not. Organizational change refers to the fact that a company and its competitors are subject to organizational changes, such as a change in the structure of the company. The employment contract refers to the contract the employee has, for example, a fixed or temporary contract and all the relevant aspects that are included in the contract, i.e. agreements made about the future. Lastly, the uncertain future for the organization refers to the extent to which the company, and to a smaller degree its competitors, are uncertain or lack knowledge about the future (Sverke et al., 2000).

The subjective characteristics are made out of 4 different aspects as well, namely perceived employability, perceived control, family responsibility and the need for security. Perceived employability means that a person considers himself to be a employable worker in the current labor market, meaning that it is easy for them to get a job. Perceived control means that a person can, to a certain extent, influence, pressure or control the degree to which he or she can get fired. Family responsibility indicates the extent to which a person has or experiences some form of responsibility to take care of his or her family. The last subjective characteristic is the need for security, this means the extent to which a person feels or experiences a need to be protected from being fired or other negative consequences, such as suspension or non-paid leave (Sverke et al., 2000).

The objective situation and the subjective characteristics together have an influence on job insecurity. Job insecurity itself is made out of two types of insecurity, the threats of job loss and the threats to job. The threats of job loss refer to the extent to which a person experiences job insecurity when it comes to potential threats of a job loss. The threats to job refer to the extent

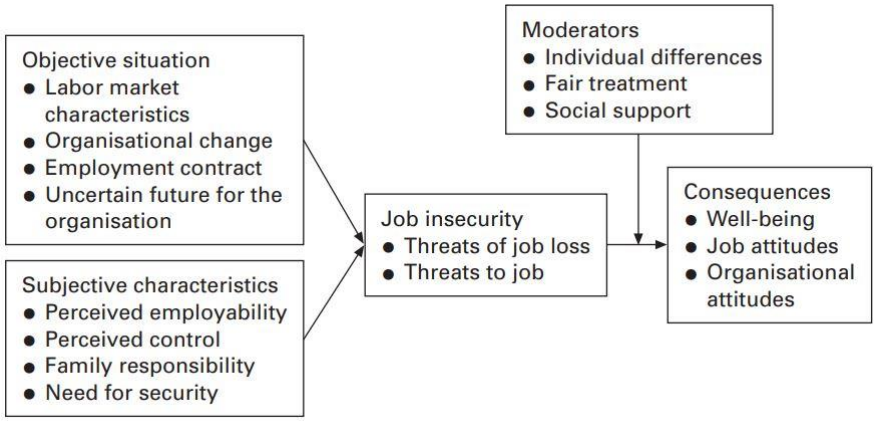
to which a person experiences job insecurity when it comes to potential threats to aspects of the job, such as wages or hours worked per week (Sverke & Hellgren, 2002; Sverke et al., 2000).

Job insecurity has consequences on the well-being of people. Next to that does it also have an effect on job attitudes. Finally, it has an effect on organizational attitudes. Job attitudes means the attitude a person has towards a job, for example, is he hopeful or is he more inclined towards social benefits. Organizational attitudes refer to the attitude a person has towards the organization, i.e. whether he will be working the same or worse (Sverke & Hellgren, 2002).

The effect of job insecurity on well-being, job attitudes and organizational attitudes is moderated by moderators (Sverke & Hellgren, 2002). There are three moderators: individual differences, fair treatment and social support. Individual differences are the personal differences every person has, for example, some people are more susceptible to the pressure of job insecurity than others. Fair treatment refers to the way the whole process is set up and experienced. If a person is fired at some point in time, if the person experiences a feeling of fair treatment in the way he was fired and everything around it was fair, the consequences of job insecurity are mitigated, especially the consequences on job attitudes and organizational attitudes. The last moderator is social support and this refers to any form of support in case of a lay-off. When there is some form of support in case of a lay-off job insecurity is generally lowered (Sverke & Hellgren, 2001).

Figure 1 displays all these effects.

Figure 1. Effects of and on job insecurity



(Sverke & Hellgren, 2002)

Based on the work done by Sverke & Hellgren (2002, pp.37-38) job insecurity can be described as: “a subjectively experienced, multidimensional phenomenon which may arise as a function of the interaction between the objective situation and subjective characteristics, a phenomenon which may have detrimental consequences for employee attitudes and well-being, where such consequences may be mitigated by a number of potential moderators”.

There are also other potential different factors that might have an impact on job insecurity, such as threats of impaired job content, demotion, pay development and relationships with co-workers. However these factors need to be more researched on in order to be able to state with certainty whether or not they have an effect, but based on previous preliminary research they at least seem plausible (Sverke & Hellgren, 2002).

A noteworthy comment that needs to be made is that job insecurity not only affects the worker or the person that experiences it, but also the employer. The reason for this is that the most valuable individuals are more proned to look for job alternatives in other companies or in other markets. This effect is amplified by the fact that the employers have to do more with less resources (Sverke & Hellgren, 2002; Sverke & Hellgren, 2001).

2.2. Having children

The decision to have children can be based on different things. There are three main categories described by Kohler et al. (2006) when it comes to fertility decisions, the first category is the socio-economic incentives to postpone having a child. This means that some financial incentives have a role or an influence on fertility. Next to that, can investment in education also be seen as a factor that postpones having children. The second category is the social context, an example of this is when other people, close to the relevant person, have children. The third category are institutions. This include labor market rigidities, the quality of child care support and gender roles etc. Furthermore, fertility also seems to respond quite vividly with major exogenous events or shocks, for example (civil) war or famine (Kohler et al., 2006). Moreover, fertility is also effected by less child deaths. This effect can be seen especially in third world countries, when perinatal and child mortality rates declined the fertility rates also declined (Kohler et al., 2006).

2.3 Relationship between job insecurity and having children

Now that job insecurity has been defined the (potential) link between job insecurity and having children can be portrayed, this will be done in this paragraph.

One of the earliest work done on the possible effect of job insecurity and fertility behavior, and one that is also quite often mentioned in other successive work on this topic, is the study done by Ranjan (1999). Ranjan (1999) developed a model of fertility behavior in order to provide a possible explanation for a sharp decrease in birth rates in former Soviet republics and eastern European countries. Ranjan (1999) argues that because of the existence of irreversibilities that are associated with fertility decisions and the possibility to delay fertility for another time in the future, it can be ideal or beneficial for some individuals to delay having a child in a time of increased income uncertainty, such as job insecurity. The irreversibilities of fertility decisions imply that once a person has a child this decision cannot be reversed (Ranjan, 1999). Ranjan (1999) finds that an increase in uncertainty about future income can cause people to delay their fertility decision. This is due to the fact that there is a possibility to delay fertility and the irreversibilities of fertility. This can even cause threshold behavior, where certain people (just) under the uncertainty threshold will delay having children, while people above the threshold will start to have children quite instantly. This threshold is influenced by the degree of uncertainty about future income. Furthermore, a rise in uncertainty would tend to increase the threshold level, while a reduction in income itself would cause more people to fall below the threshold. These two effects strengthen each other, which can cause (sharp) decreases in fertility. This could be a possible reason for the decrease in birth rates in most of the former Soviet republics and East European countries (Ranjan, 1999).

Scherer (2009) looked at the effect of job insecurity on social consequences. Throughout the 2000s in Europe there had been many developments with regards to the labor market. Many policy was implemented to promote flexible employment. The reason for this is that flexible employment could help with more employment in general, but could also help with getting a higher percentage of female workers, due to the reason that they could more easily combine work and family life. However, there is also a downside to a more flexible labor force. There are negative consequences for both working conditions and the private and family life, because flexibility is often associated with more insecurity and poorer working conditions (Scherer, 2009). Flexible employment together with bad working conditions and intrinsic insecurity (such as job insecurity) provides the foundation of problematic situations in the family and private

life of people (Scherer, 2009). Based on the analysis Scherer (2009) came to the conclusion that for western European countries insecure employment, so more job insecurity, is partnered with more problematic social and family situations, one of which is fertility. Scherer (2009) found a negative relationship between job insecurity and fertility. He noted that at the individual level fertility seems to fall with subjective measures of insecurity, particularly perceived job insecurity. Particularly temporary employees are less likely to intend or plan to have children in the future. Furthermore, the economic problems, such as a decreased fertility rate, seem more featured in high unemployment protection and in high unemployment countries. However, the negative consequences or relationships do seem to be partly shaped by the specific context given by every country for each country (Scherer, 2009).

Hofmann and Hohmeyer (2013) studied the effect of economic uncertainty on the decision to postpone having children. They stated that the introduction of an unemployment reform caused substantial fear about one individual's own economic situation, for example job insecurity, and as a consequence reduced fertility between 2000 and 2005. In order to be able to study this effect they looked at a major German unemployment benefit reform, where they used data from the German Socio-Economic Panel. Moreover, they exploited exogenous variation in economic uncertainty induced by the announcement of the reform as an instrumental variable (Hofmann & Hohmeyer, 2013). Hofmann and Hohmeyer (2013) found that strong economic concerns and uncertainty are significantly related to lower fertility of women between the ages of 26 and 44 years old who are cohabiting with a male partner. Women aged between 26 and 44 cohabiting with a male reduced fertility in the following year as a response to strong economic worries and uncertainty. Next to that, found they that strong economic uncertainty was evaluated to decrease fertility by between 25% and 50% of the average rate (Hofmann & Hohmeyer, 2013).

Further analysis revealed that especially strong economic concerns and uncertainty perceived or experienced by women reduced fertility. When controlling for female economic concerns and uncertainty male fears did not have an effect on the fertility outcome of the couple. Moreover, is the effect fueled by couples where the breadwinner is a male, by couples with a medium household income and by couples who already had children. Especially the latter two cases, couples with an intermediate household income and couples with children, responded most strong and significant to economic concerns and uncertainty. The reason for this is that their economic position is not that strong, but it is good enough to lose something. This highlights the economic vulnerability of families (Hofmann & Hohmeyer, 2013). Furthermore, they found that couples without children did not reduce their fertility. Also for low-income

households did they not find an effect of economic concerns and uncertainty on fertility. This result could be due to the reason that negative shocks do not matter regarding fertility decisions for low-income couples. For younger women Hofmann and Hohmeyer (2013) did not find an effect between economic concerns and uncertainty on fertility. For younger couples Hofmann and Hohmeyer (2013) also did not find an effect of economic concerns and uncertainty on fertility. A reason for this can be that increased cohabitation as a consequence to economic concerns and uncertainty appears particularly among younger couples, meaning that there is no negative effect of economic concerns and uncertainty on fertility. In this way increased cohabitation acted as a counteracting mechanism. Another reason could be a higher share of unplanned births among younger couples. Note, however, that one downside of this study is that the results are restricted to short-term effects of perceived economic concerns and uncertainty on fertility (Hofmann & Hohmeyer, 2013).

Even though this study does seem as a good foundation for this study there are some additional downsides, next to the restriction of the results to the short-term, that pose room for further research. The first is that the study is limited with regards to the generalizability to both other countries and a longer period of time. Secondly, job insecurity is a part of perceived economic concerns and uncertainty. So it is also useful to look at the sole effect of job insecurity on fertility, but also look at the effect of job insecurity on fertility for a longer period of time and for a different category of people. Furthermore, there are some substantial differences between the study done by Hofmann & Hohmeyer (2013) and this study. The first major difference is that Hofmann & Hohmeyer (2013) focused on women between the age of 26 and 44, while this study focuses on men and women between the age of 18 and 62. A further difference between this study and the one done by Hofmann & Hohmeyer (2013), is that the latter looked at an exogenous shock that caused perceived economic concerns and uncertainty, while this study does not look at the effect due to an exogenous shock. Another difference is that Hofmann & Hohmeyer (2013) solely looked at the effect in Germany. Furthermore, do Hofmann & Hohmeyer only look at a small period of time, while this study tries to look at a longer period of time. The last major difference is that Hofmann & Hohmeyer (2013) look at the effect of perceived economic concerns and uncertainty, one of which is perceived job insecurity, on fertility, while this study exclusively looks at the effect of job insecurity of fertility.

Clark & Lepinteur (2020) looked at the relationship between job insecurity and fertility in France. In order to be able to research this relationship they used data from the European Community Household panel (EHCP). Furthermore, the researchers only looked at respondents

who are married and cohabiting. They take into account different potential influential factors such as firm-size, macroeconomic trends, the 35-hour workweek, gender, age, education and wages. With the object of estimating the relationship between job insecurity and fertility Clark & Lepinteur (2020) used a difference-in-difference method, where younger workers in large firms where the treatment group and younger workers in smaller firms where the control group. The reason for this was the Delalande tax which caused the possibility for a natural quasi-experimental design. Moreover, 1040 respondents were analyzed from 1995 to 2001. In order to get a general idea of the relationship Clark & Lepinteur (2020) also looked at the effects between 15 European countries. Controlling for country fixed effects they found positive and significant estimates between Employment Protection Legislation (EPL) and fertility. This means that within country the higher the EPL is, so less job insecurity, the more children were born a year after. They found that for Europe as a whole fertility rates seems to be highly associated and serially-correlated with job insecurity. When focusing on France in particular Clark & Lepinteur (2020) found that a higher Delalande tax, which increased job insecurity among the younger than 50 year old workers, decreased the likelihood of having new children by a little below four percentage points. This effect, a decrease of 3.9 percentage points, is substantial and represent around 60% of the mean probability of fertility in the estimation sample. This means that the higher perceived job insecurity negatively affected fertility, hence more perceived job insecurity led to less fertility. Furthermore, controlling for parents who already had at least one child Clark & Lepinteur (2020) found that the effect is 60% smaller. Additionally, the effect of job insecurity on fertility seems to be more concentrated among workers that earn high wages and or have high education and the effect does not emerge for low-income and or less-educated workers. Further, the effect of job insecurity on fertility is more valid at the intensive margin, so for workers who already had a child, than at the extensive margin. This means that job insecurity decreases the size of the family, but not the likelihood of parenthood itself. Finally, the effect of job insecurity on fertility seems to be more noticeable in larger families. The birth of a child comes with irrevocable and permanent expenditures or cost and seems to be more expected to be delayed by (potential) parents if/when they face economic uncertainty. This forms the key principle to understanding the relationship between job insecurity and having children (Clark & Lepinteur, 2020). Nevertheless, a noteworthy comment that needs to be made is that all these effect hold for the short-run, the true long-run effects are still unknown (Clark & Lepinteur, 2020).

While The Netherlands and France are somewhat similar regarding child benefits (in the way that comparing to other European countries these two countries both have generous child benefits) there are major differences that make it interesting to study this potential effect of job insecurity on having children in The Netherlands. The first major difference is that The Netherlands has more benefits than France, a second difference is that the Dutch benefits are more generous and a third difference is that in The Netherlands the benefits last longer than in France and a final difference is that in The Netherlands the benefits apply to more children. For instance in The Netherlands one can get child benefits or support for their first four children while in France parents can only get a child benefit or support for their first three children (Cho, 2016).

2.4 Relationship between job insecurity and the intention to having children

Bernardi et al. (2007) looked at the effect of economic determinants, such as job insecurity, on fertility behavior. To study this effect they looked at the role of job insecurity on the intentions of couples relating parenthood and having children in west and east Germany in the beginning of the 2000s. Unlike the other studies that have been done on this possible effect Bernardi et al. (2007) used qualitative data in the form of semi-structured interviews instead of a large quantitative data set. They interviewed childless men and women around the age of 30 in both east and west Germany. The main hypothesis of the paper is that cultural values moderate the reaction of an individual to job security and this then has an effect on family formation (Bernardi et al., 2007). Bernardi et al. (2007) find that there are significant differences in the effects of job insecurity, caused by among others different cultural values, on the intentions to have a first child. Meaning that job insecurity has an effect on fertility decisions, in that it reduces the intention to have a first child as well as the actual fertility rate (Bernardi et al., 2007). Furthermore, Bernardi et al. (2007) found that job insecurity can conclusively be seen as a cause to the rising childlessness in western Germany. However for eastern Germany the same conclusion cannot hold, a reason for this, which seems dominant, is that this is due to different social and cultural values. Due to the fact that eastern Germany was in control of the Soviet Union different social and cultural values were established then in western Germany that was in hands of the Allies. Furthermore, another reason for this effect could be that there is a difference between job instability and job insecurity and that both effect fertility different.

When people experience job instability they can still be confident that they are able to deal with job market hazards in general but also while having a child (Bernardi et al., 2007).

Moreover, Bernardi et al. (2007) find that while job insecurity in western Germany can cause less fertility, once people in western Germany start having children they will have more and will have children relatively more swiftly after on another. While in eastern Germany, due to the fact that there is no effect of job insecurity on fertility, the rate of having more than one child is relatively steady. This could be due to the effect that once job instability decreases the fertility rate goes up as having a child does not seem a problem anymore or at the very least people can more easily deal with it (Bernardi et al., 2007). Nevertheless, having stated all the above this study and its conclusions do come with a major caveat, in that the study is based on two purposive samples, which causes the conclusions not to be (completely) generalizable to the whole population of Germany (Bernardi et al., 2007).

2.5 Hypotheses

Based on the theoretical framework where the possible effect between the independent variable (job insecurity) and the dependent variable (having children) is described some hypotheses could be established that portray this relationship, which can later on be tested in order to be able to know whether there is a real causal effect between the independent variable (job insecurity) and the dependent variable (having children).

Ranjan (1999) finds that an increase in uncertainty about future income can cause people to delay their fertility decision. Meaning that more uncertainty will cause less fertility. Clark & Lepinteur (2020) found that in France an increase in job insecurity among the younger than 50 year old workers decreased the likelihood of having new children by 3.9 percentage points. This indicates that a higher perceived job insecurity negatively affects fertility and that more perceived job insecurity leads to less fertility. Scherer (2009) came to the conclusion that for western European countries insecure employment, so more job insecurity, is partnered with more problematic social and family situations, one of which is fertility. Scherer (2009) found a negative relationship between job insecurity and fertility. He noted that at the individual level fertility seems to fall with subjective measures of insecurity, particularly perceived job insecurity. Hofmann and Hohmeyer (2013) found that strong economic concerns and uncertainty are significantly related to lower fertility of women between the ages of 26 and 44 years old who are cohabiting with a male partner. Women aged between 26 and 44 cohabiting

with a male reduced fertility in the following year as a response to strong economic worries and uncertainty. Next to that, found they that strong economic uncertainty was evaluated to decrease fertility by between 25% and 50% of the average rate (Hofmann & Hohmeyer, 2013). Based on these findings one can expect an increase in job insecurity to cause a decrease in having children. As a consequence the following negative hypothesis can be formulated:

H0: The higher the job insecurity, the more (or same) children people will have.

H1: The higher the job insecurity, the less children people will have.

As an additional check this study also looks at the effect of job insecurity on the intention to have children. As mentioned earlier in paragraph 2.3 Bernardi et al. (2007) find that there is a significant effect of job insecurity on the intentions to have a first child. Furthermore, job insecurity causes people to reduce the intention to have a first child as well as the actual fertility rate (Bernardi et al., 2007). This indicates that there is a possible effect of job insecurity on the intention to have children, as a result the negative hypothesis would be:

H0: The higher the job insecurity, the higher (or same) the intention to have children.

H1: The higher the job insecurity, the lower the intention to have children.

As a further check this study also looks at the effect of job insecurity on the number of children people would want to have in the future. Bernardi et al. (2007) find that job insecurity in western Germany caused people to have more children and relatively more swiftly after on another once people in western Germany started having children. While in eastern Germany the rate of having more than one child is relatively steady. However for eastern Germany job insecurity did not have an effect on the intention to have children, while in western Germany job insecurity did have an effect on the intention to have children. So based on the findings for western Germany by Bernardi et al. (2007) that once job insecurity decreases the people in western Germany started to have more children and relatively more swiftly after on another, the following negative hypothesis can be formulated:

H0: The higher the job insecurity, the more (or same) children people will want to have.

H1: The higher the job insecurity, the less children people will want to have.

3. Methodology

3.1 Data

Data of the dependent variable, how many children people have, the independent variable, job insecurity, and the control variables, income, education and age, will be obtained from the LISS panel. The LISS panel is a component of the Measurement and Experimentation in the Social Sciences project (MESS project). The questionnaire is taken by the research institute CentERdata. The LISS panel contains data of 5,000 households and consists of about 7,500 individuals. Moreover the panel is based on a true probability sample of households taken from the population register by Statistics Netherlands. The respondents participate in this online questionnaire every year. Next to that, the LISS panel has been active since October 2007 and provides data until 2020 for Dutch households (CenterERdata, n.d.).

3.2 Operationalization

Regarding the independent variable, job insecurity, as mentioned earlier data will be obtained from the LISS panel. Job insecurity is measured by a number of questions or statements. The first statement asked to the respondents is: "*It is uncertain whether my job will (/would) continue to exist*". The second statement is: "*I will (probably) lose my current job*". These statements are all qualitative measures measured on a 10-point likert scale. Where 1 refers to great certainty and 10 refers to great uncertainty, this applies to all questions. These are all indicators of the extent to which a person experiences job insecurity (CenterERdata, n.d.). Another way of operationalizing job insecurity would be to look at the insecurity of having a job (and not the job insecurity when people already have a job), by operationalizing job insecurity in this way (job insecurity if people would have a job) one also includes the job insecurity of people that do not have a job at the moment of when the research is done. By including these people one might find different effects then when this group is not included. However, due to the fact that this study researches data obtained from the LISS panel this is not possible, as the LISS panel lacks data about this group.

With regards to the dependent variable, how many children people have, the LISS panel asked their respondents: "*How many children do you have?*". The answer to this question is an open answer where respondent are free to fill in the amount of children they have (CenterERdata, n.d.).

As a double check this study will also look at the extent to which these respondents are willing to have children. The LISS panel examined this by asking their respondents the question: "*Do you think you will have [more] children in the future?*". This question is also a qualitative measure measured on a 10-point likert scale. Where 1 refers to no (more) children in the future and 10 refers to (more) children in the future. The respondents answered this question thus with an answer on a 10-point likert scale (CenterERdata, n.d.).

Furthermore, this study also looks at the number of children people would want to have in the future. This is again done by using the LISS panel. The LISS panel asked their respondents the question: "*How many [more] children do you think you will have in the future?*". This is an open question where respondents can fill in the number of children they would want to have in the future.

3.3 Control variables

In order to get an estimate that is robust and that reflects the reality as best as possible, different other potential factors that can influence the dependent variable need to be taken into account (Healey, 2014). This will be done by adding these potential influential factors as control variables. The most dominant influential factors will be presented in this paragraph.

According to Clark and Lepinteur (2020) whether a person has a high income or not affects if the person will have children or not. When people experience a higher income they are expected to and in reality do have more children. The reason for this is that they feel that they can take better care of their children, have more time to take care for their children and feel more stability (David & Smeeding, 1985). As (high) income can influence this research it will be accounted for. This will be done as a dummy variable, where 0 indicates a low-income household, 1 indicates a medium-income household and 2 indicates a high-income household. This study chooses for these three categories based on how other research done on this study has operationalized income and due to the way the data is obtained. Furthermore, this data is also obtained from the LISS panel.

Another factor that will be taken into account is education. When the education of people increases, meaning that they go to school longer or obtain a higher degree of education the chance of them having children decreases. When someone's education increases most of the time he or she will focus more on their career then on having a family and or having children.

Moreover, since they focus more on their career they will also have less time to have children, so it is a reinforcing effect (Geruso & Royer, 2018). Geruso & Royer (2018) found that when the education, of especially women, increases the chance of having children decreases as well as the total amount of children decreases. Because education could influence this research it will be accounted for. Identical to income, education will also be accounted for as a dummy variable and will also be obtained from the LISS panel. In this case 0 will indicate no education past elementary school, 1 will indicate a high school diploma, 2 will indicate an MBO diploma, 3 will indicate an HBO diploma and 4 will indicate a university diploma.

The final factor that will be taken into account is age. Age can have an effect on people having children, because above a certain age, especially for women, it will be harder, sometimes impossible to have children (Bialik, 2018). But even when not accounting for this biological aspect, an even important, if not more important aspect might be the psychological aspect. When having children a lot of different dilemma's come into play, one of which is age. Bialik (2018) found that on average people do not want to have children when they are too young, because they want to enjoy life, but they also do not want to become 'old' parents. Furthermore CBS (2019) found that the average age women have when having children, especially their first-born, is around 29.9 years old. All in all, age can be seen as a factor that can influence this research and thus will be accounted for. As the other two control variables data on this variable will be obtained from the LISS panel. The data however is, as one expects it to be the years of all the respondents. In order to be able to examine this variable, it will be constructed into a dummy variable, where 0 will indicate 18 – 23 years old, 1 will indicate 24 – 29 years old, 2 will indicate 30 – 35 years old, 3 will indicate 36 – 41 years old and so forth until the final age of 62.

3.4 Empirical analysis

In order to be able to answer the research question, *To what extent does a worker's job insecurity affect him or her having children?*, the aforementioned hypotheses, that are mentioned in chapter 2.5, need to be tested. These hypotheses will be tested through STATA. In STATA the dependent variable as well as the independent variable and all the control variables will be added. After all the data is added, the data will be looked at to pick out any missing values for certain variables and to make sure that the data is cohesive. After this, the data has been made ready to perform the analysis. The next chapter, where the results of these

analyses along with their interpretations will be presented, will start off with a couple of descriptive analyses in order to get a first glimpse of all the variables. Afterwards, a correlation analyses will be presented to see if there are any similarities between the dependent and independent variables. Thereupon, the causal analyses will be portrayed. With regards to the causal analyses a couple of models will be estimated. First, the effect will be estimated between only the independent variable, job insecurity, and the dependent variable, having children. The second estimation is the same as the first estimation but will include the control variables, income, education and age, as well. The third estimation is the same as the second estimation, but will also include year fixed effects. The fourth estimation is the same as the third estimation, but will also include individual fixed effects. Furthermore, this study will also look at the differences between males and females and the effect for married people. Moreover, this study also looks at the effect of job insecurity on the intention to have children and the number of children people would want to have. These models or estimations will act as an additional check. Based on the estimations or models obtained from STATA the hypotheses can be rejected or not and afterwards an answer can be given to the research question.

3.4.1.Type of regression

Because this study deals with a large data set that is both diversified with regards to the number of respondents and the number of years of which data is available this study uses a panel analysis. This study specifically takes time fixed effects and individual fixed effects into account, due the fact that this study examines a fairly long period of time and a substantial data set. The reason for this is that this study looks at the same units over time and tries to provide a causal explanation holding account for relevant variables over the same time span. Panel designs have a couple of benefits, one of which is that it blocks the effect of potential confounders that change during the observation period. A second benefit is that if one has more observations of the same unit, one can measure, include and partial out potential omitted variables in the causal path. A third benefit is that panel designs have the combined strengths of time series analysis and cross-sectional analysis (Toshkov, 2016). Another reason for using fixed effects regressions is that it considerably reduces the threat of omitted variable bias. This is because it relies on within-group information and measures changes within these groups across time (Toshkov, 2016; Healey, 2014).

4. Results

In this chapter of this study the results of the empirical analyses will be presented. This will be done by first depicting a description of the relevant variables. After this descriptive analyses, a correlation analyses will be given which portrays associations between the independent variable (job insecurity), the control variables (income, education and age) and the dependent variable (having children). Finally, a causal analyses will be estimated and interpreted.

4.1 Descriptive analysis

In order for the data to be able to be ready for use one has to clean the data. The LISS panel gives us data for 5,675 observations for 12 years after cleaning the data and removing missing values for certain variables there are 2,591 observations for each year. Furthermore, does this study have data for a period of 8 years, making that this study has 20,728 observations in total for the period between 2012 and 2019. Out of these 2,591 observations 1,479 are female and 1,112 are male. Out of the respondents are 1,693 individuals married and 898 are not married, but do have a partner. The average age of these respondents is 32 years old and the respondents vary between 18 and 62 years old. Furthermore, 518 people have obtained a low form of education in the form of only elementary school, 421 people have experienced a somewhat higher form of education in the sense that they also successfully went to high school, 742 people have successfully gotten their MBO diploma, 383 people have successfully finished their HBO and lastly 527 respondents experienced an even higher form of education, due to the fact that they went to a university. Moreover, out of the 2,591 observations are 781 observations part of a low-income household, 1,252 observations are part of a medium-income household and 558 observations are part of a high-income household. When looking at job insecurity 973 people said to experience a feeling of uncertainty when it comes to the continuation of their job and 483 people stated they will (probably) lose their current job. When looking at the fertility decisions and the children of these respondents, 1,583 respondents have children and 1,008 respondents do not have children. Out of the 1,583 respondents that have children they have at least 1 child and at most 8 children and on average have 3 children. When asked about their fertility decisions 1,145 respondent stated that they want to have (more) children in the future. These 1,145 respondents want to have children within the next 1 to 4 years, with an average of within 1.5 years. Furthermore, do people that want to have children in the future want to at least have 1 child and at most want 6 children. People that want to have children want on average 3

children. Out of the 1,008 respondents that do not have any children are 707 childless by choice and do not want to have children (in the near future). In addition, are 521 respondents out of the 1,008 childless respondents content with this decision, for 246 respondents does it not matter whether or not they have any children or will have any children and 241 respondents consider it a loss not having any children.

Table 1 portrays the descriptive statistics of all the variables used in this study. Fertility refers to the actual fertility rate, so number of children people have. Intention (willingness) to have children in the future is how willing people are to have children in the future, on average people are neither very eager to have children nor are they very eager to be childless, as on average people score a 5 on the intention (willingness) to have children in the future meaning that they are slightly inclined to have children in the future. Number of children people want to have in the future refers to the amount of children people would want to have in the future, so their ideal amount of children. Job insecurity has a mean of 4 meaning that on average people experience some job insecurity in the form of either uncertainty about the continuation of their job and the chance of them losing their job. Education is an ordinal variable and as a consequence does not have a mean or standard deviation. Out of the 2,591 respondents, 19.99% have obtained a low form of education in the form of only elementary school, 16.25% of the respondents also successfully went to high school, 28.64% successfully got their MBO diploma, 14.78% successfully got their HBO diploma and 20.34% successfully got their university diploma. For education the most occurring form of education is an MBO diploma.

Table 1. Descriptive statistics

	Minimum & Maximum	Mean	Mode	Median	Standard Deviation
Fertility	0 – 8	3	3	3	1.2
Job insecurity	1 - 10	4	3	4	0.7
Income	972 – 5,294	1,843	1,641	2,158	472
Education	0 - 4	-	2	2	-
Age	18 - 62	32	35	38	2.5
Intention (willingness) to have children in the future	1 - 10	5	4	4	0.8
Number of children people want to have in the future	1 – 6	3	3	4	0.4

4.2 Correlation analysis

Now that one has a general idea of the variables that are being dealt with, a correlation analyses can be estimated. Correlation analyses portray potential correlation effects between the independent and the dependent variable and the control variables as well. This analyses gives information about whether or not the independent variable influences the dependent variable, but also the control variables and whether or not the control variables have an influence on the independent variable. Correlation analyses have the benefit of better understanding the data and variables that one is dealing with. Furthermore, it allows one to determine the direction and to some extent the strength of associations, which makes it easier for further research to examine the potential causal links (Healey, 2014).

Table 2 shows if there are potential correlation effects between the independent variable (job insecurity), the control variables (income, education and age) and the dependent variable (fertility or having children). Based on table 2 it seems that there is a small negative relationship between job insecurity and having children, however this relationship is not statistically significant for either a confidence interval of 90% nor for the 95% or 99% confidence intervals. Income seems to have a moderate negative link with having children. Meaning that if one of these two variables goes up in value the other variable decreases in value. This link is statistically significant for a confidence interval of 99%. Moreover, income has a moderate non statistically significant link with job insecurity, which appears to be negative of nature. Education has a small positive link with having children, which is not statistically significant. Furthermore, education has a small negative connection with job insecurity, which is also not statistically significant. Finally, education has again have a small positive link with income, which like the other two links is also not statistically significant. For age a considerable connection with having children can be seen. This connection is negative of nature and is statistically significant for the confidence interval of 99%. Moreover, does age have a connection with job insecurity, this is a small positive link that is not statistically significant. In addition, age appears to have a substantial positive connection with income, which is statistically significant for the confidence interval of 99%. Lastly, does age have a small positive connection with education, which is not statistically significant.

Based on table 2 one would fail to reject the null-hypothesis (H0) and reject the alternative hypothesis (H1). Meaning that there is no effect of job insecurity on whether or not people have children. However for results to be as robust as possible one cannot put too much weight on this estimation, as it is merely a correlation analysis and as a consequence its aim is to provide

a first general understanding of the patterns that are present among the variables. In order to be able to state whether or not a causal relationship exists between the independent variable (job insecurity) and the dependent variable (having children) causal regressions must be done, this will be done in the following paragraph.

Table 2. Correlation analyses

Variables	Fertility	Job insecurity	Income	Education	Age
Fertility	1.000				
Job insecurity	-0.004 0.946	1.000			
Income	-0.181*** 0.000	-0.226 0.492	1.000		
Education	0.006 0.782	-0.049 0.816	0.052 0.476	1.000	
Age	-0.483*** 0.000	0.059 0.182	0.579*** 0.000	0.086 0.214	1.000

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

4.3 Potential causal analysis

In this paragraph the causal estimations will be presented along with their interpretations. First a table will be presented that shows the estimations of the effect of job insecurity on having children both with and without holding account for any potential relevant factors. The same table also shows the effect of job insecurity on having children while holding account for year fixed effects and individual fixed effects. After that a table will be presented that shows the separate effects for females and males. Afterwards, a table will be presented that shows the effect of job insecurity on having children for married people. Finally, a table will be presented that shows both the potential effects of job insecurity on whether people are willing to have (more) children in the future and how many children people might want to have in the future.

4.3.1 First estimations

Table 3 estimates trough 4 different models the effect of job insecurity on having children (the amount of children). Model 1 (left column in table 3) shows the effect of job insecurity on having children without holding account for any relevant variables. Model 1 estimates an intercept or constant of 1.343 which means that if there were no effect of job insecurity on having children people will have 1.343 or 1 child (as one cannot have 1.343 child). This intercept is statistically significant for the confidence interval of 99%, due to the fact that the p-value of the intercept (0.000) is smaller than an alpha of 0.01. In model 1 job insecurity has a correlation coefficient of -0.00108 meaning that if job insecurity would rise with 1 percentage point fertility or having children would decrease with 0.108 percentage point, however this effect is not statistically significant for neither a confidence interval of 90%, 95% or 99%, due to the fact that its p-value (0.926) is bigger than an alpha of respectively 0.1, 0.05 or 0.01. Furthermore, model 1 has an r-squared and an adjusted r-squared of 0.000 meaning that model 1 predicts 0% of the variation of having children. For all the models hold a number of observations of 20,728.

Model 2 (second to left column in table 3) shows the effect of job insecurity on having children while holding account for income, education and age. In model 2 job insecurity has a correlation coefficient of -0.0542 meaning that if job insecurity would rise with 1 percentage point, fertility or having children would decrease with 5.42 percentage point. However this effect is not statistically significant, due to the fact that its p-value is 0.479. Income has an correlation coefficient of 0.0421 meaning that if the income of a person increases he or she would have 4.21 percentage point more kids. Education has a correlation coefficient of 0.0224 meaning that if the education of a person increases he or she would have 2.24 percentage point more children. Both correlation coefficients of income and education are not statistically significant, because the p-values are respectively 0.226 and 0.892. Age has a correlation coefficient of -0.092 meaning that if the age of a person increases he or she would have 9.2 percentage point less children. This effect of age on having children is statistically significant for a confidence interval of 95%, because of the fact that its p-value (0.04) is smaller than an alpha of 0.05.

Model 3 (second to right column in table 3) shows the effect of job insecurity on having children this time holding account for fixed year effects as well as income, education and age. In model 3 job insecurity has a correlation coefficient of -0.0284 meaning that if job insecurity would rise with 1 percentage point fertility or having children would decrease with 2.84 percentage

point, this effect is not statistically significant due to the fact that its p-value is 0.206. Income has an correlation coefficient of 0.349 meaning that if the income of a person increases he or she would have 3.49 percentage point more children. Education has a correlation coefficient of -0.00101 meaning that if the education of a person increases he or she would have 0.1 percentage point less children. Both correlation coefficients of income and education are not statistically significant due to the fact that the p-values are respectively 0.176 and 0.942. Age has a correlation coefficient of -0.00893 meaning that if the age of a person increases he or she would have 0.89 percentage point less children. This effect of age on having children is statistically significant for a confidence interval of 90%, because of the fact that its p-value is 0.064 which is smaller than an alpha of 0.1.

Model 4 (right column in table 3) shows the effect of job insecurity on having children holding account for individual fixed effects, year fixed effects as well as income, education and age. In model 4 job insecurity has a correlation coefficient of -0.0244 meaning that if job insecurity would rise with 1 percentage point fertility or having children would decrease with 2.44 percentage point. This effect is not statistically significant, due to the fact that its p-value is 0.489. Income has an correlation coefficient of 0.0318 meaning that if the income of a person increases he or she would have 3.18 percentage point more children. Education has a correlation coefficient of 0.00084 meaning that if the education of a person increases he or she would have 0.084 percentage point less children. Both correlation coefficients of income and education are not statistically significant, due to the fact that the p-values are respectively 0.359 and 0.259. Age has a correlation coefficient of -0.00418 meaning that if the age of a person increases he or she would have 0.4 percentage point less children. This effect of age on having children is statistically significant for a confidence interval of 90%, because of the fact that its p-value is 0.078 which is smaller than an alpha of 0.1.

All in all, one can see that when holding account for year fixed effects and controlling for income, education and age job insecurity seems to have a negative effect on having children, which amounts to a decrease of having children with 2.8 percentage point, when including for individual fixed effects this effect decreases to 2.4 percentage point. However, both these effects do not seem to be significant. Moreover, do income and education seem to not have an effect on having children, unlike age which seems to be statistically significant, also when holding account for year fixed effects and for individual fixed effects. However, when holding account for year fixed effects the effect of age decreases in extent and in statistical power. This

decrease in extent is further reinforced when one holds account for individual fixed effects. Furthermore, people tend to almost always have at least one child.

Table 3. First estimations

	Fertility (OLS)	Fertility (OLS)	Fertility (Year FE)	Fertiltity (Year & individual FE)
Job insecurity	-0.00108	-0.0542	-0.0284	-0.0244
	(0.926)	(0.479)	(0.206)	(0.489)
Income		0.0421	0.349	0.0318
		(0.226)	(0.176)	(0.359)
Education		0.0224	-0.00101	0.00084
		(0.892)	(0.942)	(0.259)
Age		-0.092**	-0.00893*	-0.00418*
		(0.04)	(0.064)	(0.078)
Cons	1.343***	1.845***	1.628***	1.522***
	(0.000)	(0.000)	(0.000)	(0.000)
N	20,728	20,728	20,728	20,728
R-sq	0.000	0.085	0.094	0.086
adj. R-sq	-0.000	0.052	0.052	0.049

* p<0.10, ** p<0.05, *** p<0.001

4.3.2 Separate effects for females and males

Ayllón (2019) found that for both women and men across Europe increased job insecurity caused them to decrease their fertility rate, however for women this effect was slightly smaller. A potential reason for this could be that men appear to be the primary earner. When men experience job insecurity the effect of job insecurity is bigger on fertility, because it is harder for the couples to raise children if the primary earner loses his (/her) job (Ayllón, 2019). On the other hand Hofmann and Hohmeyer (2013) found bigger effects for German women than for German men. As a result this study expects different results for females and males and thus estimates these effects separately in table 4.

Table 4 shows the effect of job insecurity on having children for both females and males separately, while still holding account for time fixed effects, individual fixed effects, income, education and age. Model 1 (left column in table 4) shows the effect of job insecurity on having children, while holding account for time fixed effects, individual fixed effects, income, education and age, for females. In model 1 job insecurity has a correlation coefficient of -0.0481 meaning that if job insecurity would rise with 1 percentage point, fertility or having children

would decrease with 4.81 percentage point. This effect is not statistically significant, due to the fact that its p-value is 0.175. Income has a correlation coefficient of -0.028 meaning that if the income of a female increases she would have 2.8 percentage point less children. This correlation coefficient is not statistically significant, due to the fact that its p-value is 0.704. Education has a correlation coefficient of -0.0237 meaning that if the education of a female increases she would have 2.37 percentage point less children. This correlation coefficient is statistically significant for a confidence interval of 90%, due to the fact that the p-value is 0.058 which is smaller than an alpha of 0.1. Age has a correlation coefficient of -0.038 meaning that if the age of a female increases she would have 3.8 percentage point less children. This effect of age on having children is statistically significant for a confidence interval of 90%, because of the fact that its p-value is 0.067 which is smaller than an alpha of 0.1. For model 1 holds a total number of observations of 11,832 females.

Model 2 (right column in table 4) shows the effect of job insecurity on having children, while holding account for time fixed effects, individual fixed effects, as well as for income, education and age, for males. In model 2 job insecurity has a correlation coefficient of -0.0212 meaning that if job insecurity would rise with 1 percentage point, fertility or having children would decrease with 2.12 percentage point. This effect is not statistically significant, due to the fact that its p-value is 0.224. Income has an correlation coefficient of -0.039 meaning that if the income of a male increases he would have 3.9 percentage point less children. This correlation coefficient is statistically significant for a confidence level of 90%, due to the fact that its p-value is 0.052 which is smaller than 0.1. Education has a correlation coefficient of 0.046 meaning that if the education of male increases he would have 4.6 percentage point more children. This correlation coefficient is not statistically significant, due to the fact that the p-value is 0.427. Age has a correlation coefficient of -0.098 meaning that if the age of a male increases he would have 9.8 percentage point less children. This effect of age on having children is not statistically significant, because of the fact that its p-value is 0.517. For model 2 holds a total number of observations of 8,896 males.

So all things considered, does it seem that for females job insecurity does have a bigger effect on whether or not they have children than for males. However, in both cases does it seem that job insecurity does not have a statistically significant effect on having children or not, neither for females nor for males. Furthermore, are education and age also relevant factors that influence whether or not females will have children, with education having a bigger effect on having children. Moreover, does education seem to have a positive effect for males unlike job

insecurity, income and age. For males appears the only relevant factor to be income, also negatively effecting having children. Additionally, have females on average slightly more children, when rounding both are 1 (as one cannot have half a child), but the constant for females is more near 2 children than 1 child, while the constant for males is almost 1.

Table 4. Separate effects for female and male

	Fertility (Year & individual FE)	Fertility (Year & individual FE)
Job insecurity	-0.0481	-0.0212
	(0.175)	(0.224)
Income	-0.028	-0.039*
	(0.704)	(0.052)
Education	-0.0237*	0.046
	(0.058)	(0.427)
Age	-0.038*	-0.098
	(0.067)	(0.517)
Cons	1.698***	1.004***
	(0.000)	(0.000)
N	11,832	8,896
R-sq	0.529	0.483
adj. R-sq	0.268	0.428

* p<0.10, ** p<0.05, *** p<0.001

4.3.3 Effects for married people

Other work done on this topic gave some indications that it might be interesting and beneficial to look at the effect for married people, as they are more likely to have (more) children on average than non-married people (Bernardi et al., 2007). Furthermore, different studies find different effects for married people, while Bernardi et al. (2007) found no effect between job insecurity and having children for married people. Modena et al. (2013) found a small negative effect between job insecurity and having children for married people in Italy. Meaning that for married people in Italy job insecurity experienced by one of the persons in a marriage meant that they have less children. Moreover, Westoff (1978) found for married people that there is a significant effect between being married and having children. As a result, this study looks at the effect of job insecurity on having children for married people, to see if job insecurity affects having children for these Dutch citizens. The reason for this is the statistically significant relationship that already exist for married people with having children as found by Westoff

(1978) and the contrasting results found by among others Bernardi et al. (2007) and Modena et al. (2013).

Table 5 shows the effect of job insecurity on having children holding account for time fixed effects, individual fixed effects, income, education and age for married people. Job insecurity has a correlation coefficient of -0.062 meaning that if job insecurity would rise with 1 percentage point fertility or having children would decrease with 6.2 percentage point. Income has a correlation coefficient of 0.018 meaning that if the income of a person increases he or she would have 1.8 percentage point more children. These effects of both job insecurity and income are not statistically significant, due to the fact that their p-values are respectively 0.376 and 0.285. Education has a correlation coefficient of -0.0014 meaning that if the education of a person increases he or she would have 0.14 percentage point less children. Age has a correlation coefficient of -0.0048 meaning that if the age of a person increases he or she would have 0.48 percentage point less children. These effects of education and age on having children are statistically significant for a confidence interval of 90%, because of the fact that their p-values are respectively 0.078 and 0.069 which is smaller than an alpha of 0.1. For table 5 hold a total number of observations of 13,544.

So when looking at the effect of job insecurity, while holding account for time fixed effects, individual fixed effects, income, education and age, on having children for married people, it seems that job insecurity does not have an effect on whether or not married people will have children. The only relevant factors that seem to have an effect on whether or not married people will have children appear to be education and age, both negatively effecting having children and both equally statistically strong with age having a slightly larger effect than education.

Table 5. Effects for married people

	Fertility (Year & individual FE)
Job insecurity	-0.062
	(0.376)
Income	0.018
	(0.285)
Education	-0.0014*
	(0.078)
Age	-0.0048*
	(0.069)
Cons	1.191
	(0.698)
N	13,544
R-sq	0.623
adj. R-sq	0.497

* p<0.10, ** p<0.05, *** p<0.001

4.3.4 Further analysis

Table 6 shows the effect of job insecurity on the willingness to have children in the future and on the number of children that people would want to have in the future, again while taking individual fixed effects, income, education and age into account. Model 1 (left column in table 6) shows the effect of job insecurity on the willingness or intention to have children, while holding account for individual fixed effects, income, education and age. In model 1 job insecurity has a correlation coefficient of -0.0526 meaning that if job insecurity would rise with 1 percentage point the willingness to have children in the future would decrease with 5.26 percentage point. This effect is not statistically significant, due to the fact that its p-value is 0.745. Income has a correlation coefficient of 0.102 meaning that if the income of a person increases he or she would have an increase of 10.2 percentage points in the willingness to have children in the future. Education has a correlation coefficient of 0.00242 meaning that if the education of a person increases he or she would have an increase of 0.242 percentage point in the willingness to have children in the future. Age has a correlation coefficient of 0.0322 meaning that if the age of a person increases he or she would have an increase 3.22 percentage point in the willingness to have children in the future. These effects of income, education and age on the willingness to have children in the future are not statistically significant, because of the fact that the p-values are respectively 0.662, 0.859 and 0.265.

Model 2 (right column in table 6) shows the effect of job insecurity on the number of children people would want to have, while holding account for individual fixed effects, income, education and age. In model 2 job insecurity has a correlation coefficient of -0.148 meaning that if job insecurity would rise with 1 percentage point the number of children people would want to have in the future would decrease with 14.8 percentage point. This effect is not statistically significant, due to the fact that its p-value is 0.271. Income has a correlation coefficient of -0.045 meaning that if the income of a person increases he or she would have less children by 4.5 percentage points, this effect is statistically significant for a confidence interval of 90%, due to the fact that its p-value is 0.081. Education has a correlation coefficient of 0.138 meaning that if the education of a person increases he or she would have more children by 13.8 percentage point. Age has a correlation coefficient of 0.023 meaning that if the age of a person increases he or she would want to have more children in the future with 2.3 percentage point. These effects of education and age on the number of children people would want to have in the future are not statistically significant, because of the fact that their p-values are respectively 0.114 and 0.293.

Summing up, there seems to be a negative relationship between job insecurity and the intention or willingness to have children in the future as well as a negative effect between job insecurity and the number of children people would want in the future. However, both these effect do not appear to be statistically significant. Moreover, there seems to be no statistically significant effect of income, education or age on whether or not people want to have children in the future. Furthermore, there also seems to be no statistically significant effect between education and age on the number of children people would want to have in the future. Additionally, does income seem to be the only factor influencing the number of children people would want. Income appears to be negatively effecting the number of children people would want to have in the future.

Table 6. Further analysis – effect on intention to have and number of children

	Intention to have children (Individual FE)	Number of children (Individual FE)
Job insecurity	-0.0526	-0.148
	(0.745)	(0.271)
Income	0.102	-0.045*
	(0.662)	(0.081)
Education	0.00242	0.138
	(0.859)	(0.114)
Age	0.0322	0.023
	(0.265)	(0.293)
Cons	0.608	1.392
	(0.592)	(0.408)
N	20,728	20,728
R-sq	0.163	0.157
adj. R-sq	0.043	0.124

* p<0.10, ** p<0.05, *** p<0.001

4.4 Preliminary conclusion

Based on the results obtained due to the regressions done by STATA the hypotheses that were earlier established can be rejected. This will be done in this paragraph.

For the effect of job insecurity on having children the following negative hypotheses were formulated:

H0: The higher the job insecurity, the more (or same) children people will have.

H1: The higher the job insecurity, the less children people will have.

Based on the findings of this study (table 3) that when holding account for year fixed effects, individual fixed effects and controlling for income, education and age job insecurity seems to negatively affect having children. However, this effect is not statistically significant. Resulting into the fact that one cannot reject the null hypothesis (H0) and consequently the alternative hypothesis (H1) is rejected. So the null hypothesis (H0) holds and there is no statistically significant negative effect between job insecurity and having children.

Moreover, were the following hypothesis formulated with regards to the relationship between job insecurity and the intention or willingness to have children:

H0: The higher the job insecurity, the higher (or same) the intention to have children.

H1: The higher the job insecurity, the lower the intention to have children.

Based on the findings in table 6 there seems to be no statistically significant negative effect of job insecurity on the willingness to have children in the future, while holding account for individual fixed effects, income, education and age. As a result, the null hypothesis (H0) cannot be rejected. So the alternative hypothesis (H1) is rejected and the statement that job insecurity does not have a negative effect on the willingness to have children holds.

With regards to the potential effect of job insecurity on how many children people would want to have in the future, the following hypotheses were formulated:

H0: The higher the job insecurity, the more (or same) children people will want to have.

H1: The higher the job insecurity, the less children people will want to have.

Based on the results from table 6 there seems to be no statistically significant effect of job insecurity on the number of children people would want to have in the future. As a result, the null hypothesis (H0) cannot be rejected and the alternative hypothesis (H1) is rejected. So the null hypothesis (H0) holds and there is no statistically significant effect of job insecurity on the number of children people would want to have in the future.

Summing up this study fails to reject any of the null hypotheses (H0) and finds no statistically significant effect.

5. Discussion

In this part of the study some caveats and limitations of this study will be mentioned. This will be followed with some recommendations for further research. Finally, some policy implications will be given.

5.1 Limitations

One limitation of this study is that it looks at the effect of job insecurity on having children for a period of 8 years, which constitutes a medium-term effect (Sverke & Hellgren, 2002). But in order to establish a true long-term effect or a true effect, future research may look at a considerably longer period of time. Another limitation of this study is that by studying solely this period of time potential (exogenous) shocks or influential factors that preceded this time period are not taken into account. One way this research dealt with this was to look at the period before the researched time period (2012 – 2019) to see if there could be potential (exogenous) shocks or influential factors that could potentially influence whether or not people have children. No such (exogenous) shocks or influential factors were found. A further limitation is that this study did not take the jobless that could experience job insecurity into account. In order to get a complete picture of the possible effect of job insecurity on having children one should also look at job insecurity if people would have a job, not solely look at the people that have a job.

Given the fact that this study tries to research a social science phenomena, one can never be 100% sure about his findings and thus about his conclusions. Due to the fact that the social world is complicated and in many ways is intertwined with all kinds of different aspects of life, it is hard to truly research the single effect of one factor, in this case job insecurity, on another factor, in this case having children. In the beta sciences researchers often have and are able to have a real experiment, where they can manipulate the factor that they are trying to research. In the social sciences however this possibility and ability is not feasible, due to moral reasons (Toshkov, 2016). Another reason why this is not possible is that intervention or manipulation could bias or at the very least influence the factor that one is trying to research, thus skewing and biasing the results, making the study less valid (if it is still valid at all). This makes finding real causal linkages in the social sciences hard to do (Healey, 2014). These are phenomena that are present in this study. Furthermore, another drawback when studying social sciences is the fact that, especially when using methods like STATA or SPSS, one cannot include all relevant variables. This is due to the fact that in current day one does not know which variables or factors

to include, that is one lacks knowledge of a potential influential factor, which is known as omitted variable bias. Another reason is that, as mentioned earlier, due to fact that the social world is intertwined many factors could potentially influence the dependent variable, however it is practically impossible to include all relevant factors as it could be so many (Toshkov, 2016; Healey, 2014). Also this phenomena is present in this study.

Another limitation of causal regressions, especially panel designs, is the uncertainty about the validity beyond the respondents being observed over time. Even if one found statistically significant causal relations, assumptions still have to be made about how well and if the found causal effect will generalize to other units. However, this limitation is somewhat limited due to the fact that the data obtained from the LISS panel is based on a true probability sample of households taken from the population register by Statistics Netherlands, making it that the results of this study are generalizable. Nonetheless, given the abovementioned (first) limitation, the results of this study should be taken carefully when generalizing to the whole population, as should be the case with all social science research (Toshkov, 2016). Another potential downside is that panel designs are still vulnerable to differential changes in the units (Toshkov, 2016).

Due to the reasons mentioned above there is a chance of a potential reduced statistical, causal and external validity of this study. Turning to the construct validity, which is the validity that covers the relation between the operationalized concepts used in empirical research and the theoretical concepts that a study attempts to study (Toshkov, 2016; Healey, 2014). This study has a high construct validity, because of the fact that the theoretical concepts that this study attempts to study perfectly aligns with the operationalized concepts used in the empirical research.

A further potential limitation could be that the observed causal effect in this study is heterogenous, meaning that it works differently in different subpopulations and that the study is based on a subpopulation in which there is no causal effect. This is a possible reason for why this study did not find any statistical significant effect, while other researchers found statistical significant effects. Even so this limitation should be taken carefully, as it is based on two assumptions, first that the causal effect is heterogenous and second that the research is based on a subpopulation who experience no causal effect (Toshkov, 2016).

A final limitation could be that the results could be biased due to subjectivity. This study tries to research the causal link between job insecurity and having children. In order to do so a yearly

questionnaire by the LISS panel is used. This questionnaire could however be susceptive of subjectivity, since the respondents fill in themselves how they feel and as a consequence can differentiate the answer from reality. Moreover, since there is no way to control the answers of the respondents response bias could be present. Even so with all this stated, there seems no reason for respondents to give different answers than the true answers and as a result response bias does not seem to be a problem. However, when one does research with subjective measures response bias should always be taken into account (Toshkov, 2016).

Because of the above mentioned limitations the results found in this study may not be causal and thus should be taken with some skepticism.

5.2 Recommendations

In this part some recommendations will be made for further research. The recommendations made are partly based on the potential limitations of this study. Given the fact that this study is one of the few and first to look at the potential effect of job insecurity on having children for such a period of time (8 years), this study would recommend to look at this potential effect of job insecurity on having children for somewhat similar and particularly larger period(s) of time, for example, more than 10 years in order to establish the true medium-term and specifically the true long-term effect of job insecurity on having children.

Another recommendation that this study makes is to potentially look at the macro effect of job insecurity on having children. Most research on this topic is based on micro data and a single country, which is due to the fact that this potential causal relationship is based on people and not, for example, countries. Some research, for example, Scherer (2009) who looked at the effect of job insecurity on fertility for western European countries, has been done on multiple countries or the macro effect, yet there is still a gap when it comes to the potential effect of job insecurity on having children. Therefore, it might be interesting to look at this potential effect of job insecurity on having children for the Western world or for developing countries or even look at this effect for the Western world and compare that to the effect of developing countries or compare the effect between countries in the Western world or between developing countries. One could also look at the effect of job insecurity on having children in countries that have specific policy influencing one or both of these factors. China, for example has a one child policy this could make China an interesting case to look at. One could solely look at this effect in such a particular country, but one could also compare it to other (similar) countries.

A second to last recommendation that this study makes is that it can be beneficial to not only look at the job insecurity of people that actually have a job, but to look at the effect of job insecurity on having children if people were to have a job. It could be that people that experience either a very high degree of job insecurity or a very low degree of job insecurity do not have a job at the time of the research and as a consequence are not taken into account when doing the research. By looking at this group one might get different results than this study or even perhaps other studies done on this subject.

A final recommendation that this study would like to make is to put more emphasize on the intention of parents to have children in the future and the number of children people would want to have in the future. Some research, for example, Bernardi et al. (2007) looked at the potential effect of job insecurity on the intention of parents to have children in the future, however there is still a gap in the literature when it comes to the intention to have children and job insecurity. Given the potential effect of job insecurity on having children it might be compelling to learn more about whether or not people also want to have more or less children and how many children people might want. In this way one is able to better understand this potential relationship between job insecurity on one hand and having children on the other hand. Moreover, when one understands this potential relationship better, (better) policy recommendations and policy can be made.

5.3 Policy implications

Based on the findings of this study some policy recommendations could be made. It is noteworthy to mention that this study did not find a statistical significant effect, which has consequences for policy recommendations.

While this study did not find any statistical significant causal effects between job insecurity and having children, if further research does find a causal relationship or if the policy recommendation is based on different research, that does find an effect then a policy recommendation would be to decrease the job insecurity felt by people. There are different ways the government can achieve this, one is to make unemployment insurance easier to get and or also have a higher benefit pay out (Ariza et al., 2003; Auer & Danzer, 2015). The government can also try to increase the job security by making policy that strengthens the position of workers and makes it harder for employers to fire their employees. The government could also try to get more people into fixed contracts instead of temporary contracts or self-

employment. The government can try to do this by making policy that makes it alluring or (financially) rewarding for companies or employers to give their employees fixed contracts. However, given the fact that this study does not confirm that job insecurity decreases people having children, or even has an effect in general, the abovementioned policy recommendations should be taken carefully. What this study does recommend is to at the very least take this potential effect into account when making policy regarding either job insecurity or having children based on findings done by other researchers.

Based on the findings of this study, this study recommends the government to carefully take the possible relationship between job insecurity and having children into account when making policy regarding one of these two aspects, yet it should not be the main focus when making policy. Depending on the situation certain aspects, for example (financial) cost or (financial) benefits, might hold more value when making policy and should be given priority over this potential relationship between job insecurity and having children.

6. Conclusion

In this part of the study the main findings will be summarized, an answer will be given to the research question, potential reasons for the main results and findings will be given and a link will be made with previous papers and work done on this topic.

This study looked at the potential effect of job insecurity on having children for Dutch citizens, while taking relevant factors, like income, education and age, into account. Furthermore, this study took year fixed effects and individual fixed effects into account and looked at the potential effect of job insecurity on having children for 8 years. By looking at such a period of time this study is one of the first studies that looked at the potential effect of job insecurity on having children for a longer period of time, so the effect in the medium-term, of job insecurity on having children. As a way to further differentiate between other studies done on this topic this study also looked at the potential effect of job insecurity on the intention to have children in the future and how many children people would want to have in the future. Moreover, this study made estimates for females and males and for married people as well. When looking at the effect of job insecurity on having children holding account for year fixed effects and individual fixed effects and controlling for income, education and age job insecurity seems to have a negative effect on having children, with a decrease of having children with 2.44 percentage points, meaning that more job insecurity will lead to less children, however this effect is not statistically significant. Furthermore, holds for both females and males that job insecurity has a negative effect on having children. For females hold that an increase in job insecurity will cause them to decrease them having children with 4.81 percentage points and for males to decrease them having children with 2.12 percentage points, again however these effects are not statistically significant. For males appears the only relevant factor to be income, while for females education and age also play a role in having children or not. For married people there also appears to be no statistically significant effect of job insecurity on having children. For married people the only relevant factors that seems to influence if they have children or not are education and age. When looking at the effect of job insecurity on the intention to have children in the future as well as the number of children people would want to have in the future, there appears to be negative effects between job insecurity and the intention to have children in the future and between job insecurity and the number of children people would want to have in the future. However, when looking at the effect of job insecurity on the intention to have children in the future no statistically significant effect is found. In addition, for the effect of job insecurity on the number of children people would want to have in the future there also appears

to be no statistically significant effect. Furthermore, appears income to be the only relevant factor for how many children people would want in the future.

If these abovementioned results are linked with the research question of this study, *To what extent does a worker's job insecurity affect him or her having children?*, the following answer can be given. When controlling for year fixed effects, individual fixed effects, income, education and age job insecurity seems to not affect whether or not people have children. There is no statistically significant effect between job insecurity and having children for these observations of these Dutch citizens that are obtained from the LISS panel. Furthermore, is there also no statistically significant effect between job insecurity and having children for females or males separately or for married people. Moreover, is there also no statistically significant effect between job insecurity and the intention to have children in the future or the number of children people would want in the future. As a result, the answer to the research question would be that job insecurity does not affect whether or not a worker will have children.

So while job insecurity affects mental problems and sometimes even to a certain extent physical problems as well as other areas of the human life, such as the decision whether or not to get married (Nella et al., 2015). Based on this study, it does not affect whether or not people will have children, the intention to have children in the future or the number of children people would want in the future.

There are a couple of potential reasons for the results obtained from this study. One potential reason why this study finds no statistically significant effect as well as why this study finds dissimilar results than other studies is that for this data, these Dutch citizens, there is no statistically significant effect. Previous work done on this topic looked at for example West and East Germany and France. It could be that in The Netherlands different values are dominant or that there is a different culture or different institutions and policies regarding either job insecurity or having children. It is important to note that job insecurity increases financial insecurity and uncertainty (in general). As a consequence, job insecurity could effect and potentially decrease having children through financial insecurity (Ariza et al., 2003; Hofmann & Hohmeyer, 2013). In The Netherlands there are various (and sometimes generous) child benefits (Cho, 2016). As a result, the financial distress that comes with getting children could be less as when comparing to other countries that do not have such generous child benefits or support, such as France (Hofmann & Hohmeyer, 2013; Cho, 2016). As a result, due to the policies and institutions that are present in The Netherlands there could be no (or less) effect of

job insecurity on having children. Furthermore, as this study is one of the first to look at such a (long) period of time it could be that in the medium-term effect, potentially even in the long-term effect, job insecurity does not affect having children, the intention to have children in the future or the number of children people would want to have in the future.

If the findings and the conclusion of this study are being compared to other similar work done on this topic by different researchers one can see similarities in the outcomes, but also differences in the outcome. The results from this study does not coincide with the work done by Ranjan (1999) who found that an increase in uncertainty about future income can cause people to delay their fertility decision, meaning that more uncertainty will cause less fertility. This study also finds dissimilar results as Clark & Lepinteur (2020), who found a decrease of 3.9 percentage points for French workers. Furthermore, do the results appear to be different to work done by Scherer (2009), who came to the conclusion that for western European countries more job insecurity effects fertility negatively. Finally, this study also finds contrasting results as Hofmann and Hohmeyer (2013) who found that strong economic concerns and uncertainty are significantly related to lower fertility of women between the ages of 26 and 44 years old who are cohabiting with a male partner. With regards to the potential effect of job insecurity on the intention to have children in the future this study finds no statistically significant effect, meaning that according to this study job insecurity does not have an effect on the intention of people to have children in the future. This result is conflicting with the work done by Bernardi et al. (2007) who found that there is a significant effect of job insecurity on the intentions to have a first child. This study does find a statistically significant effect when controlling for job insecurity, income, education, age, year fixed effects and individual fixed effects for age. Furthermore, does this study also find a statistically significant effect for age on having children for woman and for married people. Moreover, is the effect of age on having children bigger for women than in general. This is in line with the work done by Bialik (2018) and also by Liu & Case (2011) who found that age has a negative effect on fertility, especially for women. Additionally, this study finds that for women as well as for married people education also seems to be a statistically significant factor that influences having children. This is in line with the work done by Geruso and Royer (2018) and Monstad et al. (2008), who found that as the education, of especially women, increases people will start to have less children. For males this study finds a statistically significant effect of income on having children. Furthermore, this study also found that income has a statistically significant effect on the number of children people would want to have in the future. This is line with Clark & Lepinteur (2020), David &

Smeeding (1985) and Weeden et al. (2006) who all found that as income increases people, especially men, will have less children and with Weeden et al. (2006) who found that when income decreases people will want to have less children, in absolute numbers, in the future.

Literature

- Ariza, A., De la Rica, S., & Ugidos, A. (2003, October). *The Effect Of Flexibility In Working Hours On Fertility: A Comparative Analysis Of Selected European Countries*. https://core.ac.uk/download/pdf/6440758.pdf
- Auer, W., & Danzer, N. (2015). Fixed-Term Employment and Fertility: Evidence from German Micro Data. *CESifo Economic Studies*, *62*(4), 595–623. https://doi.org/10.1093/cesifo/ifv014
- Ayllón, S. (2019). Job insecurity and fertility in Europe. *Review of Economics of the Household*, *17*(4), 1321–1347. https://doi.org/10.1007/s11150-019-09450-5
- Barr, N. (2020). *Economics of the Welfare State* (6th ed.). Oxford University Press.
- Bernardi, L., Klärner, A., & Von der Lippe, H. (2007). Job Insecurity and the Timing of Parenthood: A Comparison between Eastern and Western Germany. *European Journal of Population / Revue Européenne de Démographie*, *24*(3), 287–313. https://doi.org/10.1007/s10680-007-9127-5
- Bialik, K. (2018, August 9). *Middle children have become rarer, but a growing share of Americans now say three or more kids are 'ideal.'* Pew Research Center. https://www.pewresearch.org/fact-tank/2018/08/09/middle-children-have-become-rarer-but-a-growing-share-of-americans-now-say-three-or-more-kids-are-ideal/
- Bloom, D. E., Canning, D., Fink, G., & Finlay, J. E. (2010). The Cost of Low Fertility in Europe. *European Journal of Population / Revue Européenne de Démographie*, *26*(2), 141–158. https://www.jstor.org/stable/40784183?seq=1#metadata_info_tab_contents
- CBS. (n.d.). *Bevolking | Cijfers & Context | Vergrijzing | Volksgezondheidenzorg.info*. volksgezondheidenzorg. Retrieved April 15, 2021, from https://www.volksgezondheidenzorg.info/onderwerp/bevolking/cijfers-context/vergrijzing
- CBS. (2019, May 11). *Average age of first-time mothers up to 29.9 years*. Statistics Netherlands. https://www.cbs.nl/en-gb/news/2019/19/average-age-of-first-time-mothers-up-to-29-9-years
- CBS. (2021, March 17). *Ontwikkelingen zzp*. Centraal Bureau voor de Statistiek. https://www.cbs.nl/nl-nl/dossier/dossier-zzp/hoofdcategorieen/ontwikkelingen-

zzp#:%7E:text=Steeds%20meer%20werkenden%20zijn%20zzp,13%20procent%20van%20alle%20werkenden.

- CenterERdata. (n.d.). *About the Panel | LISS Panel Data*. LISS Panel. Retrieved April 1, 2021, from https://www.lissdata.nl/about-panel
- Cho, E. Y. N. (2016). Child Benefit Portfolios Across OECD Countries. *Social Indicators Research*, *132*(3), 1099–1115. https://doi.org/10.1007/s11205-016-1334-1
- Clark, A. E., & Lepinteur, A. (2020, April). *A Natural Experiment on Job Insecurity and Fertility in France*. https://halshs.archives-ouvertes.fr/halshs-02540036/document
- Creighton, H. (2014, November). *Europe's Ageing Demography*. ILCUK. https://ilcuk.org.uk/wp-content/uploads/2019/11/Europes-Ageing-Demography.pdf
- David, M., & Smeeding, T. (1985). *Horizontal Equity, Uncertainty, and Economic Well-being (Volume 50) (National Bureau of Economic Research Studies in Income and Wealth)* (1st Edition). University of Chicago Press.
- Fischer, F., Miller, G.J. and Sidney, M. S. (Eds.) (2007). *Handbook of public policy analysis: theory, politics, and methods.* Boca Raton: Taylor & Francis Group.
- Geruso, M., & Royer, H. (2018). The Impact of Education on Family Formation: Quasi-Experimental Evidence from the UK. *NBER Working Paper Series*, 1–39. https://doi.org/10.3386/w24332
- Grant, J., & Hoorens, S. (2007, June 29). *Consequences of a Graying World*. RAND Corporation. https://www.rand.org/blog/2007/06/consequences-of-a-graying-world.html
- Haars, L. (2019, May 25). *False: "The Netherlands has the most flexible labour market in Europe."* Eufactcheck.Eu. https://eufactcheck.eu/factcheck/false-the-netherlands-has-the-most-flexible-labour-market-in-europe/
- Healey, J. F. (2014). *Statistics: A Tool for Social Research*. Belmont , California: Wadsworth Cengage Learning.
- Hofmann, B., & Hohmeyer, K. (2013). Perceived Economic Uncertainty and Fertility: Evidence From a Labor Market Reform. *Journal of Marriage and Family*, *75*(2), 503–521. https://doi.org/10.1111/jomf.12011
- Kohler, H. P., Billari, F. C., & Ortega, J. A. (2006). Low Fertility in Europe: Causes, Implications and Policy Options. In *The Baby Bust: Who will do the Work? Who Will Pay the Taxes?* (pp. 48–109). Rowman & Littlefield Publishers.

- Liu, K., & Case, A. (2011). Advanced Reproductive Age and Fertility. *International Journal of Gynecology & Obstetrics*, *117*(1), 95–102. https://doi.org/10.1016/j.ijgo.2011.11.002
- Mackenbach, J. P., Slobbe, L., Looman, C. W. N., van der Heide, A., Polder, J., & Garssen, J. (2011). Sharp upturn of life expectancy in the Netherlands: effect of more health care for the elderly? *European Journal of Epidemiology*, *26*(12), 903–914. https://doi.org/10.1007/s10654-011-9633-y
- MichaelPage. (n.d.). *Netherlands leading country in flexible working policies*. Retrieved April 15, 2021, from https://www.michaelpage.nl/en/advice/market-updates/netherlands-leading-country-flexible-working-policies
- Modena, F., Rondinelli, C., & Sabatini, F. (2013). Economic Insecurity and Fertility Intentions: The Case of Italy. *Review of Income and Wealth*, *60*, S233–S255. https://doi.org/10.1111/roiw.12044
- Monstad, K., Propper, C., & Salvanes, K. G. (2008). Education and Fertility: Evidence from a Natural Experiment*. *Scandinavian Journal of Economics*, *110*(4), 827–852. https://doi.org/10.1111/j.1467-9442.2008.00563.x
- Morgan, S. P., & King, R. B. (2001). Why Have Children in the 21st Century? Biological Predisposition, Social Coercion, Rational Choice. *European Journal of Population*, *17*, 3–20. https://link.springer.com/article/10.1023/A:1010784028474
- Nella, D., Panagopoulou, E., Galanis, N., Montgomery, A., & Benos, A. (2015). Consequences of Job Insecurity on the Psychological and Physical Health of Greek Civil Servants. *BioMed Research International*, *2015*, 1–8. https://doi.org/10.1155/2015/673623
- OECD. (2016, September). *Be Flexible! Background brief on how workplace flexibility can help European employees to balance work and family*. https://www.oecd.org/els/family/Be-Flexible-Backgrounder-Workplace-Flexibility.pdf
- Ranjan, P. (1999). Fertility Behaviour under Income Uncertainty. *European Journal of Population*, *15*, 25–43. https://link.springer.com/article/10.1023/A:1006106527618
- Scherer, S. (2009). The Social Consequences of Insecure Jobs. *Social Indicators Research*, *93*(3), 527–547. https://doi.org/10.1007/s11205-008-9431-4
- Sverke, M., Gallagher, D. G., & Hellgren, J. (2000). Alternative Work Arrangements: Job stress, well-being and pro-organizational attitudes among employees with different

employment contracts. *Health Effects of the New Labour Market*, 145–167. https://doi.org/10.1007/0-306-47181-7_12

- Sverke, M., & Hellgren, J. (2001). Exit, Voice and Loyalty Reactions to Job Insecurity in Sweden: Do Unionized and Non-unionized Employees Differ? *British Journal of Industrial Relations*, *39*(2), 167–182. https://doi.org/10.1111/1467-8543.00195
- Sverke, M., & Hellgren, J. (2002). The Nature of Job Insecurity: Understanding Employment Uncertainty on the Brink of a New Millennium. *Applied Psychology*, *51*(1), 23–42. https://doi.org/10.1111/1464-0597.0077z
- Toshkov, D. (2016). *Research Design in Political Science*. Palgrave Macmillan.
- Weeden, J., Abrams, M. J., Green, M. C., & Sabini, J. (2006). Do high-status people really have fewer children? *Human Nature*, *17*(4), 377–392. https://doi.org/10.1007/s12110-006-1001-3
- Westoff, C. F. (1978). Marriage and Fertility in the Developed Countries. *Scientific American*, *239*(6), 51–57. https://doi.org/10.1038/scientificamerican1278-51